INTELLIGENCE PLANNING FOR AIRBORNE OPERATIONS: A PERSPECTIVE FROM OPERATION MARKET-GARDEN

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ABSTRACT

Intelligence Planning for Airborne Operations: A Perspective From Operation Market-Garden. By MAJ Arnold C. Piper, USA, 75 pages.

This monograph discusses the complex relationship between intelligence and operational planning from the perspective of a World War II combined and joint operation, Operation Market-Garden. Operation Market-Garden was the largest airborne operation in history and is an excellent example of the use of airborne forces in an operational role.

This monograph first examines the uniqueness of airborne operations and the added complexity of planning and executing these operations. The operational setting which Market-Garden was executed is also discussed to provide a comprehensive understanding of the causes and effects behind the failure of this operation. It also investigates the importance of the effects of terrain and weather on airborne operations and specifically how they effected Market-Garden.

Next this monograph investigates the widely held "myth of an intelligence failure" in Operation Market-Garden. The use of intelligence for Market-Garden planners and decision makers is evaluated using the intelligence cycle found in U.S. Army Field Manual 34-3, *Intelligence Analysis*. This monograph also examines why Allied leaders made decisions that in retrospect seem senseless based on the information available to intelligence planners and decision makers. Finally, this monograph discusses the linkage of World War II airborne planning to XVIII Airborne Corps intelligence planning, and provides insight on the differences in planning for airborne operations since Operation Market-Garden.

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Introduction

Long after Leonardo da Vinci designed a parachute in the fifteenth century, Brigadier General William Mitchell devised the first serious plan to use airborne troops in combat. In October 1918, Mitchell suggested capturing Metz by parachuting an infantry division from Allied bombers as a method of breaking the stalemate of World War I trench warfare. However, the signing of the Armistice in November preempted the first planned use of airborne forces.[1]

The threat of a second world war gave the U.S. Army the impetus to modernize. One of the Army's changes was the development of airborne warfare by the Office of the Chief of Infantry in 1939.[2] The outbreak of World War II, the greatest war in history in terms of human suffering, provided the laboratory with which to test the airborne concept.[3]

The combination of the effects of catastrophic economic crisis and oppressive war reparations on Germany provided the rise of National Socialism and Adolph Hitler to the leadership of Germany in the 1920's and 30's.[4] France and Great Britain did nothing as Hitler abrogated the Treaty of Versailles by rearming Germany and reoccupying the Rhineland. They also watched helplessly as Germany occupied the Sudentenland and Austria in 1938 and Czechoslovakia one year later. France, Great Britain and the Soviet Union also stood idly by as Germany invaded Poland in August of 1939.[5]

German troops continued their conquest of Europe by seizing Norway in April 1940 and against Holland, Belgium and France in a "lighting war" during May and June of 1940 by defeating the combined armies of France and Great Britain.[6] It was during "blitzkrieg" warfare that the German Luftwaffe became the first to use airborne

operations as a key component of a major combat operation. Highly trained German paratroopers descended on airfields, bridges, and fortifications of Norway, Holland and Belgium, surprising their defenders and winning costly but nevertheless, decisive victories.[7]

The United States entered the war when Germany's ally, Japan, made a surprise attack on U.S. military installations in Hawaii on December 7, 1941. By 1943, German armies were fighting the Allies in Italy, the Balkans, and against the Soviets on the Eastern Front. On 6 June 1944 the Allies opened up a second front with the largest amphibious assault in history on the beaches of Normandy. Overlord, the code-name of the combined U.S. and British operation gave the Allies the much needed toehold on the European continent.[8] After three months of bitter fighting in France, German forces retreated to the German frontier and planned for a final defense of the homeland.

It is within this context of World War II that Operation Market-Garden was planned and executed. On 17 September 1944 the Allies attempted to exploit Allied success with the largest airborne operation in history, Market-Garden. The size of Market-Garden was enormous: it included over 5,000 transport aircraft, 2,613 gliders, and almost 5,700 sorties of bombers and fighters and close-air support aircraft.[9] Over 20,000 paratroopers and more than 13,000 glider troops landed in the area of operation during the nine days of the operation, twice the number that accompanied the Overlord invasion

Field Marshall Bernard Law Montgomery designed the lightning stroke to spring the Allied armies across Holland, into the heart of Germany.[10] Historians describe Market-Garden as "one of the most daring and imaginative operations of the war."[11]

However, planners based its success on an assessment that Montgomery's forces would meet an enemy believed to be "ill-organized and of varying standard."[12]

The estimate could have not been further from the truth. German forces in the area proved to be much stronger and better organized than expected and Allied losses were enormous.[13] Market-Garden, conceived from the optimism for an easy victory ended on the night of 26 September 1944 when the survivors of the decimated 1st British Airborne Division withdrew from their defensive perimeter in Oosterbeek.[14]

Operation Market-Garden offers remarkable insight into the complex relationship between intelligence and operational planning. This monograph explores the relationship, specifically in respect to how terrain and weather analysis effected the operation. It also evaluates the role of the intelligence cycle to provide appropriate intelligence to Allied decision makers. This monograph also evaluates why Allied leaders made decisions that in retrospect seem senseless based on the available information. However, the underlying theme of this monograph is to explore the reasons why Market-Garden is considered an "intelligence failure" and provide solutions to ensure today's military planners do not make the same types of mistakes.

Airborne Planning

Airborne forces have strategic mobility and can be used for a number of different types of missions. Airborne missions can be strategic, operational, or tactical.[15] Examples of strategic missions are; a show of force, a strike against a target deep in enemy territory, or seizure of an airfield for follow-on forces. Operation Just Cause in Panama in 1989 is an example of airborne forces used in a strategic role.[16]

Operation Market-Garden is an exceptional example of the use of airborne forces in an operational role. Airborne forces conducted an aerial envelopment deep in the enemy's rear in order to seize key terrain and bridges to support the maneuver of ground forces. The operational commander's concept of operation relied on airborne forces as a key element of the plan and the airborne force provided the link between tactical and operational objectives.[17]

Distinct characteristics differentiate airborne operations from ground operations. Airborne operations are inherently joint, include a planned linkup with follow-on forces, and are very complex to plan and execute.[18] Airborne forces give the U.S. military the unique ability to deploy rapidly anywhere in the world. They provide the capability to bypass land and sea obstacles, provide surprise and possess the force capability to rapidly mass on an objective.[19]

However, airborne forces have limitations. They are dependent on supporting air forces for long-range transportation, fires support and resupply. Airborne forces are vulnerable to enemy actions along the air route to the drop-zone and once on the ground lack tactical mobility. Because airborne forces lack organic armor they are susceptible to counterattack from enemy armor and mechanized units.[20] These factors have stayed constant since the introduction of airborne forces in combat during World War II. As in World War II, airborne operations still depend on the elements of security, speed and surprise for their success.[21]

In essence very little has changed concerning the concept of planning and employment of airborne forces since World War II. Transport aircraft carry more paratroopers, they fly faster and have greater range but the planning that ensures that the

airborne forces arrive on the objective has fundamentally not changed. Although technology has grown at a dramatic pace, improvements to counter-systems such as air defense and intelligence have ensured that airborne operations are no simpler or safer to conduct. It is likely that the First Allied Airborne Army and 1st British Airborne Corps staff planners for Market-Garden would feel comfortable with the procedures used today by the XVIII Airborne Corps.

One of the keys to the success of airborne operations is accurate and thorough staff planning. The commander's estimate is critical to airborne planning. According to Joint Publication 2.0, the four essential steps of the commander's estimate are mission analysis, course of action development, course of action analysis, and the decision.[22] Staff estimates are key to this process and are imbedded in the decision making process.

The intelligence estimate is the G-2/J2's primary input to the commander and staff. The intelligence estimate analyzes the enemy situation, the area of operations and their effects on friendly and enemy forces, enemy courses of action as well as the enemy's strengths and vulnerabilities.[23] The IPB process is a critical part of the intelligence estimate and is one component of the detailed analysis conducted by intelligence planners as part of the decision making process.

Military planners during World War II recognized the role of intelligence planning for an airborne operation. The Weapons Systems Evaluation Group (WSEG) studied several U.S. Army airborne operations at the end of World War II. Their conclusions were:

> In the first place, knowledge of weather, enemy anti-aircraft and anti-airborne defenses is the basis for all planning and action taken to

circumvent or neutralize their effects with the object of delivering the airborne force intact and to the correct objective area.[24]

General James M. Gavin, commander of the 82nd Airborne Division during Operation Market-Garden came to many of the same conclusions concerning airborne planning. According to General Gavin the selections of drop zones and landing zones have a greater influence on the final outcome of an airborne operation than any other planning step. Gavin listed the following factors in the order of importance in their planning:[25]

- Proximity to objectives
- Enemy flak and ground defenses
- Accessibility for troop-carrier aircraft
- Suitability of terrain

General Gavin's guidance written in 1947 remains true 50 years later. His advice on the factors of selecting drop and landing zones is the best guidance available to planners today. Although Gavin did not specifically mention the role of intelligence to determine these factors, the use of intelligence is critical to develop precise operational planning.

Current doctrine agrees with the principles provided by General Gavin in 1947. FM 90-XX, *Multi-Service Procedures for Forcible Entry Operations*, states that the airborne commander must consider the following planning factors: enemy air defense weapons and detection systems, capability of enemy reaction forces near the objective area, weather forecasts, selection of DZs, assault objectives, and subsequent areas of operation, target acquisition, and IPB to analyze the enemy, weather, terrain.[26] This

monograph analyzes the intelligence planning for Market-Garden using the factors provided in FM 90-XX.

Operation Market-Garden: The Operational Setting

The fortunes of war finally favored the Allies in 1944. Allied forces delivered unprecedented victories over German forces on all fronts. On the Eastern Front; Rumania surrendered unconditionally to the USSR and then declared war on Germany, Finland signed a truce ending their war with the USSR, and Bulgaria attempted to surrender to the Soviets. On the Southern Front the war in the Balkans was coming to an end. The Russian offensive drove to Yugoslavia and destroyed 12 German divisions in the process. Germany withdrew from Greece, and Allied forces landed in southern France and captured all the territory north to Lyons.[27] Allied optimism was well deserved.

On 26 August 1944 the Supreme Headquarters Allied Expeditionary Force (SHAEF) Intelligence Staff (G2) issued an intelligence summary that vividly described the impending defeat of the Nazi forces.

> The August battles have done it and the enemy in the West has had it. Crippled, in the NW by appalling losses, in the SW by sheer futility, and in the south by totally inadequate reserves, the armies of Rundstedt, of Kluge, and now (Stockholm would have us believe) of Model, are committed willy-nilly to what must shortly be the total surrender of more than two-thirds of France.....Two and a half months of bitter fighting, culminating for the Germans in a blood bath big enough even for their extravagant tastes, have brought an end of the war almost within sight, almost within reach.[28]

The Allies crossed the Seine River on 19 August and finally liberated Paris six days later. Montgomery's 21st Army Group, consisting of British and Canadian troops had advanced more than 250 miles since their breakout from Normandy.[29] Their goal was not the next obstacle, the Siegfried Line but eastward to the Rhine River.[30] The single limiting factor in the Allied success seemed to be the lack of logistics to sustain the Allied armies drive through western Europe.

No Allied planner provided the optimistic estimate that Allied forces would advance as quickly as they had. The SHAEF estimate for reaching the Seine River was D+90 or 4 September with 12 divisions. On 4 September, the day SHAEF planners anticipated crossing the Seine River, there were already 16 U.S. divisions 200 kilometers east of the Seine.[31] The determined defense by the Nazi forces and difficult fighting in the hedgerow country of Normandy allowed for a substantial buildup of all classes of supply on the continent for the July breakout and August pursuit. By the end of August, the only immediate shortage of supply was in ammunition.[32]

Port capacity became a problem. The only port open at the end of August was Cherbourg where the Allies stockpiled more than 70,000 tons of supplies. Lack of transportation, not supplies was the major cause of the logistics difficulties. The French Underground and Allied bombing devastated rail yards in France prior to the D-Day landings in Normandy to such a scale that it required an extensive effort to rebuild the infrastructure so supplies on hand could contribute to the logistical effort.[33]

Historians consider Eisenhower's decision to execute combat operations along a broad front rather than a single army group axis among the most controversial decisions made by the Supreme Allied Commander during the war. Charles B. McDonald wrote:

> Of all the decisions made at the level of the Supreme Allied Commander in western Europe during World War II, perhaps none has excited more polemics than that which raised the "one-thrust-broad-front" controversy. This has revolved about the decision that General Dwight D. Eisenhower made in September 1944 to build up his forces along the Rhine through the whole length of the Western Front, from the North Sea to Switzerland, before launching a final drive into the heart of Germany. It embodied what is known as the "broad-front strategy."[34]

Initial support to Montgomery's 21st Army Group was one of General Eisenhower's narrow front options. Montgomery's armies had advanced along an axis almost parallel to the French coast, through the countries of France and Belgium and were prepared to make an attack into Holland and finally Germany. This route would allow the British and Canadian armies to flank the northern sector of the Siegfried Line, cross the Rhine River and attack into the strategically important Ruhr.

Eisenhower's alternative narrow front option would have made General Omar Bradley's 12th Army Group the main effort and support an attack with Patton's Third U.S. Army. This alternative would take Bradley's armies through the Siegfried Line, into the Saar industrial area and finally across the Rhine River vicinity Frankfurt, Manheim, and Darmstadt, with the final drive on to Berlin.

Eisenhower decided to support a strategy to attack across the broad front. He conceptualized an offensive that would use a succession of blows, first by the 21st Army Group in the north and then by the 12th Army Group in the south with supply priorities changing as necessary. The shift to this strategy was necessary because there were not enough supplies or transportation on the continent to make a single axis attack with either Montgomery's or Bradley's armies.[35]

In the first of week of September 1944 the British Second Army reached the Dutch-Belgian border after gaining over 250 miles since their breakout in Normandy. The Second Army fixed and bypassed the ports of LeHavre, Boulogne, Calais, Dunkirk, and captured the strategically important port of Antwerp on 4 September. Although British forces seized the port at Antwerp undamaged, it was not usable until the German forces that held the land approaches to Antwerp were cleared from the area. Patton's Third U.S. Army and Hodge's First U.S. Army advanced as far east as the Meuse River but shortages of gasoline limited their attacks.[36]

The opportunity to make a swift advance through German defenses to seize operational decisive points such as the Rhur, Saar and bridges across the Rhine before the German army could regain the initiative was irresistible to Eisenhower. Eisenhower not only approved of Market-Garden, he "insisted upon it." Eisenhower commented after the war that he was willing to wait on all other operations to gain a bridgehead over the Rhine River.[37] Intermediate objectives such as ports and bypassed enemy reserves seemed secondary in importance to the prospect of gaining a major operational advantage with a rapid victory in Holland.[38]

Field Marshall Montgomery vehemently disagreed with Eisenhower's decision to use the broad-front strategy. In his opinion, the 21st Army Group should have made a bold, narrow dash into Germany and end the war before Christmas. Although it seemed logical to clear the Scheldt estuary and gain the use of the port in Antwerp, Montgomery claimed that the estuary would take weeks to clear as would the channel ports that his armies had isolated. Montgomery thought timing was essential to defeat Germany in 1944. He insisted that the decision to launch a bold attack into the heart of Germany not

be denied due to the lack of resources.[39] This predicament caused Montgomery to issue an ultimatum to Eisenhower, his new field Commander-in-Chief on 4 September:

> I would like to put before you certain aspects of future operations and give you my views:
>
> (1) I consider we have now reached a stage where one really powerful and full blooded thrust toward Berlin is likely to get there and thus end the German war.
> (2) We have not enough maintenance resources for two full blooded thrusts.
> (3) The selected thrust must have all the maintenance resources it needs without any qualification and any other operation must do the best it can with what is left over.
> (4) There are only two possible thrusts: one via the Ruhr and the other via Metz and the Saar.
> (5) In my opinion the thrust likely to give the best and quickest results is the northern one via the Ruhr.
> (6) Time is vital and the decision regarding the selected thrust must be made at once and para. 3 above will apply.
> (7) If we attempt a compromise solution and split our maintenance resources so that neither thrust is full blooded we will prolong the war.
> (8) I consider the problem viewed as above is very simple and clear cut.
> (9) The matter is of such vital importance that I feel sure you will agree that a decision on the above lines is required at once. If you are coming this way perhaps you would look in and discuss it. If so, delighted to see you lunch tomorrow. Do not feel I can leave this battle just at present.[40]

Eisenhower considered Montgomery's proposal and conferred with his staff. Eisenhower's G2, Major General Kenneth Strong recommended the 21st Army Group as the main effort supported by one U.S. army. Eisenhower understood the need to maintain a delicate balance with respect to British national prestige, Montgomery's popularity in Great Britain, and the necessity to maintain the coalition. There were also disadvantages to using Montgomery's armies as the Allied main effort. It would likely upset the U.S. Secretary of War, Stimson and other senior American leaders.[41]

Eisenhower's ultimate decision favored a balanced effort across the front but resolved to use Montgomery's 21st Army Group as the initial Allied main effort. However, Eisenhower told Montgomery that a thrust to Berlin was still out of the question until the Channel ports and Antwerp were available to logistically support the operation. On 5 September, Eisenhower augmented the 21st Army Group by assigning the First Allied Airborne Army (FAAA) to operate in support of Montgomery's advance. Montgomery also received priority of theater transportation with locomotives and rolling stocks.[42] However, the question of support from an American army was not addressed to Montgomery's satisfaction.[43]

Had Eisenhower told Montgomery to secure the approaches to Antwerp as first priority it is likely he would have done so. However, Eisenhower's indecision about a bold thrust into Germany and securing ports to allow for future operations spawned the formation of Operation Market-Garden by allowing Montgomery the latitude to develop an alternative operation. Market-Garden, although acknowledged by Eisenhower as being extremely risky offered the Allies an opportunity for a decisive victory and possibly and early end to the war.[44]

Operation Market-Garden: The Plan

There were many operational influences for Montgomery's decision to execute Operation Market-Garden. Allied leaders favored continuing the offensive before the Nazi army could recover from their recent defeats and organize a cohesive defense in front of the Rhur. The existence of the elite Allied infantry forces resting and training in

England also influenced the formation of Operation Market-Garden. The elite forces had, "in effect become coins burning holes in SHAEF's pocket."[45]

These coins were the First Allied Airborne Army (FAAA) organized on 8 August 1944 under the command of Lieutenant General Lewis Brereton. The primary reason for the formation of the FAAA was the insistence by the U.S. Department of War that airborne forces be used in a greater strategic role. Eisenhower named General Brereton FAAA commander with operational control of all available airborne forces and troop transport aircraft in theater.[46] General George C. Marshall, U.S. Army Chief of Staff and General Henry H. Arnold, commander of the Army Air Forces let General Eisenhower know with no uncertainty that they wished to see these forces used in a deep operational role.[47]

> If Marshall had won his way, the airborne operations of D-Day would have become not a shallow but a deep and bold vertical envelopment, striking eighty or ninety kilometers behind the Atlantic Wall. Since he had not had his way on the 6th of June, the test of a deep vertical envelopment remained to be attempted, and Marshall would not rest nor allow Eisenhower to forget his desires until it occurred.[48]

The Airborne Sub-Section of the SHAEF G-3 perceived that airborne operations needed a special organization to effectively synchronize airborne operations to use them in an operational or strategic role.[49] Some of the functions the FAAA was responsible for included: consultation with the air component concerning tactical air requirements, preparation and examination, in conjunction with SHAEF Planning Staff, for the employment of airborne operations, and direction and control of the execution of plans until the ground forces commander should take command of units on the ground.[50]

During the six week period prior to Operation Market-Garden, the FAAA gained valuable experience in airborne operations by planning eighteen airborne operations. Three of the operations; Transfigure, Linnet, and Comet developed to the point of loading paratroopers and equipment on aircraft and gliders.[51] General Brereton wrote in his diary on 16 September:

> We were all glad to be getting into action. In the 40 days since the formation of the First Allied Airborne Army we have planned 18 different operations, some of which were scrubbed because our armies moved too fast and others because Troop Carriers were in engaged in air supply.[52]

This lack of action was a reason why the Operation Market-Garden had few detractors among the senior leadership. General Brereton and his staff were eager to prove the concept of the untested Airborne Army. General "Boy" Browning, commander of the 1st British Airborne Corps, frustrated at not commanding his corps in battle was not the pessimistic type. Like Brereton, Browning was eager to show his capabilities as an airborne commander. Colonel Charles Mackenzie, the chief operations officer at the 1st British Airborne Corps stated that there was no operation too risky for Browning.[53]

Montgomery's plan for Operation Market-Garden was extremely bold and daring. This was uncharacteristic of the normally conservative British Field Marshall. General Omar Bradley commented when he heard the plan, "Had the pious teetotaling Montgomery wobbled into SHAEF with a hangover, I could not have been more astonished than I was by the daring adventure he proposed."[54]

On 17 September 1944, the 21st Army Group and the FAAA executed Operation Market-Garden, the largest airborne operation in the history of warfare.[55] Montgomery's plan involved dropping a carpet of airborne forces along a narrow line into Holland to be

followed up by a ground force. The first phase was 'Market' consisting of an airborne assault of the 82nd and 101st U.S. Airborne Divisions and the 1st British Airborne Division supported by the 1st Polish Parachute Brigade to seize the bridges across the Maas, Waal, and Lower Rhine rivers. The second phase was the link-up of ground forces along the 64 mile corridor by the 30th British Corps.[56]

The ultimate goal of this bold plan was to cross the Rhine and out flank Germany's strong defenses of the Siegfried Line and the West Wall. Once across the Rhine River, Allied forces could drive hard into the heart of Germany and deliver a decisive blow to the enemy. The plan was risky. It necessitated speed for the link up of ground forces to the lightly armed airborne forces that were holding the bridges and other key terrain over a 64 mile route that was in many places only one lane wide.

The specific tasks of the airborne troops were to seize and hold decisive points along a corridor to support the movement of the 30th British Corps. Their missions were respectively: The 1st British Airborne Division augmented by the 1st Polish Parachute Brigade to capture, intact, the bridges over the Lower Rhine at Arnhem and dominate the surrounding country. The 82nd Airborne Division was to capture, intact, the bridges over the Maas River north of Grave, the bridge over the Waal Rivers at Nijmegen and to seize the key terrain at Groesbeek-Bergendahl. The 101st Airborne Division under the operational control of the 30th British Corps was to seize the roads and bridges between Eindhoven and Grave. The 52nd Lowland Division (Airportable) had the mission to land north of the Arnhem area and assume the role as Airborne Corps reserve.[57]

The Second British Army with the 30th British Corps as the armored spearhead planned to attack along the narrow axis seized in advance by the airborne formations. According to the FAAA Commander's report to the Supreme Commander;

> MARKET had its counterpart in Second Army's Operation GARDEN. The latter was the code name given to the planned advance from the general line of the Albert and Eacaut Canals to the Zuider Zee. If successful, this would cut off the land exit for the enemy troops in western Holland. The advance was to be on a very narrow front, with only one road most of the way, through Eindhoven, St. Oedenrode, Veghel, Uden, Grave, Nijmegen, Arnhem, and Apeldoorn.[58]

The Second British Army under the command of Lieutenant General Miles Dempsey consisted of the 8th Corps, the 12th Corps, and 30th Corps. The mission of the 8th Corps was to move on the right (east) of 30th Corps and protect the 30th Corps east and rear flanks by capturing Weert, Soerendonk and Helmond. The 12th Corps was to advance on the left (west) flank of 30th Corps and protect the 30th Corps west flank by capturing Rethy, Arendonck and Turnhout.[59]

On 16 September the 30th Corps commander, Lieutenant General Brian Horrocks, briefed his staff and subordinate commanders concerning the execution of Operation Garden. His main concern was moving his entire force that contained approximately 70,000 soldiers and 20,000 vehicles along a single road axis to link-up with the lightly armed 1st Airborne Division in Arnhem within the scheduled ninety-six hours.[60] Horrocks emphasized the necessity for speed several times to ensure his subordinate commanders understood how vital it was to the success of the mission.[61]

Even though the plan seemed quite simple, certain aspects of its execution proved to be extremely complex. The remainder of this monograph analyzes the effects of

intelligence planning on the failure of Market-Garden and why the execution of the plan, thought to be so simple became so difficult. This monograph also compares intelligence planning for Operation Market-Garden to the U.S. Army intelligence cycle.

Terrain and Weather Analysis; Implications of a Faulty Analysis

The system used by intelligence analysts to predict the effects of weather, terrain on friendly and enemy courses of action is called intelligence preparation of the battlefield. FM 34-130 defines intelligence preparation of the battlefield (IPB) as a systematic, continuous process of analyzing the threat and environment in a specific geographic area.[62] One of the purposes of IPB is to support the military decision making process by helping the commander to selectively applying his combat power at critical points in time and space on the battlefield. IPB is especially important for operational and tactical planners because it sets the physical limitations for a plan.

The four steps of the IPB process are: define the battlefield environment, describe the battlefield's effects, evaluate the threat, and determine threat course of actions.[63] The factors to be considered when analyzing the battlefield effects are terrain analysis, weather analysis, and analysis of other characteristics of the battlefield.[64] Although there is no distinct manual for airborne IPB, the process described in FM 34-130 is broad enough to include the specifics needed for unique missions such as airborne operations.

Terrain

Intelligence preparation of the battlefield combines both the art and science of warfare. As with other scientific processes, IPB is highly dependent on the accuracy of the available technical data. Intelligence planners used technical data and studies from

many different sources to develop the terrain studies for Operation Market-Garden. Aerial photographs, maps, and recommendations of Dutch liaison officers were some of the likely sources of information that assisted intelligence planners with these technical studies.[65]

Inaccurate terrain studies made an impact on two vital areas for Operation Market-Garden; selection of the avenue of approach for the ground component and choosing drop zones for parachutist and landing zones for gliders. The terrain that supported the avenue of approach was important because it affected the link-up of ground and airborne forces. 30th Corps Commander, Lieutenant General Brian Horrocks made specific comments about the difficulty of the terrain in his pre- Market-Garden briefing to subordinate commanders. "Tough opposition must be expected an the country is very difficult - wooded and marshy -only possibility is to blast our way down the road."[66]

Montgomery knew the crucial 30th Corps attack would have to advance on a single road. Terrain and topographic studies described the shortcomings of the route as a suitable avenue of approach in great detail. Aerial photographs were available to commanders and staffs alike. They vividly described the hazards of attempting to advance an entire mechanized corps of over 20,000 vehicles along an avenue of approach consisting of a single road. The lone road had the characteristics of a route easily interdicted by a very small force or blocked by a destroyed British vehicle. General Horrocks described the avenue of approach in his memoirs:

> almost impassable for tanks; all the narrow roads ran along the tops of embankments, with wide ditches on either side, and any vehicle on an embankment was a sitting duck for the German anti-tank gunners hidden

in the orchards with which the Island abounded: one knocked-out vehicle could block a road for hours.[67]

Surely British confidence was shattered on 17 September when nine Irish Guards tanks were destroyed only two minutes into the attack by 88mm guns and Panzerfausts. The burning British tank hulks clogged the road and slowed the advance of the second tank company of the lead echelon.[68] Only the effective close-air-support and dismounted infantry released the grip the defending German units had on the lead echelon of the 30th Corps.

Montgomery knew how important terrain was to the operation and knew the problems it would cause his ground element. With the permission of General Eisenhower, Lieutenant General Bedell Smith, SHAEF Chief of Staff and Major General Kenneth Strong, the SHAEF G-2, attempted to persuade Montgomery to switch one of the U.S. airborne division drop zones to the Arnhem area. Eisenhower agreed that the operation called for additional combat power against the previously unexpected presence of the II SS Panzer Corps but was unwilling to make Montgomery change his plan. Montgomery ridiculed their concerns and told them he was not concerned with the German armor. According to General Strong, Montgomery's greatest concerns were the difficulties of the terrain and logistics.[69] The SHAEF staff could assist with logistics, but unfortunately for all those involved, Eisenhower's staff could do nothing to fix Montgomery's terrain problems.

It is difficult to understand how Montgomery approved an operation that was dependent on a link-up of ground forces with airborne forces over 64 miles of severely restricted terrain. Most of Montgomery's staff as well as the commanders and staff of

the 30th Corps fought in Northern Africa. They were aware of the destructive capabilities of the 88mm anti-aircraft gun used in an anti-tank role, especially in a point defense along a narrow, exposed avenue of advance.

Montgomery made the decision to launch Market-Garden in spite of the unsuitability of terrain because of one reason. "He had misjudged the enemy's powers of resistance."[70] A telegram from Montgomery to General Sir Alan Brooke, the Chief of the Imperial General Staff demonstrated his overconfidence: "So we have gained a great victory. I feel somewhat exhausted by it all but hope we shall now win the war reasonably quickly."[71]

Airborne planners can learn from the Market-Garden planners mistakes by analyzing the effects terrain and enemy courses of action on the 30th Corps avenue of approach. The following terrain factors were instrumental in the eventual defeat of Allied forces at Operation Market-Garden:

- Severely restricted terrain limited movement of vehicles to one major road
- The road was easily blocked by German tanks, 88mm anti-aircraft guns, and dismounted infantry
- German forces were able to counterattack from several flanking mobility corridors into the main avenue of approach
- 30th Corps was not able to mass combat power due to the narrowness of the avenue of approach and their inability to maneuver off roads

Terrain continues to have a significant impact on maneuver forces. Easily defended terrain and narrow, constricted lines of communications are easily defended by determined, well trained opposition.

Terrain studies were also consequential in selecting drop and landing zones. The decision to not place the 1st Airborne Division drop and landing zones near their objective had grave implications on the success of Market-Garden. The poor selection of drop zones and landing zones by Market-Garden planners aided in this decision. Placing the British airborne division's drop zone six to eight miles from the objective was made for the following reasons: the assessment of heavy flak in the vicinity of the objective, insufficient space for a mass airborne drop at alternate locations and the estimate that the terrain near the objective would not support the landing of gliders.

Intelligence reports in the weeks before Market-Garden showed a 35% increase of anti-aircraft positions in the vicinity of the Arnhem bridge. This made it inadvisable for the division to attempt a large-scale landing in the vicinity of the objective.[72] Planners also thought the polder (ground regained from the sea and protected by dikes) was too soft to land gliders.[73] Allied planners assumed that the gliders would dig into the soft ground on landing, causing the glider to nose-in, causing death or injury to the troops on board. This evaluation turned out to be false as it would have been feasible for several gliders to have landed in the vicinity of the Arnhem bridge. Intelligence received from imagery and the Dutch officers who had lived and trained in the area exaggerated the dangers of the boggy ground to the gliders. In fact the parachutist and gliders could have landed almost anywhere in the area except in the forest and towns.[74] The lack of a suitable drop zone out of the immediate range of heavy flak made it necessary to land six to eight miles from the objective.

Field Marshall Montgomery agreed that distance from the DZ/LZ to the Arnhem bridge was one of the major mistakes made during Operation Market-Garden.

Montgomery wrote in his memoirs that he should have ordered the 1st Airborne Corps to arrange for the drop of at least one parachute brigade close enough to the bridge to capture it in a few minutes.[75]

The paratroopers lost the tactical surprise they originally achieved on the afternoon of 17 September when they were forced to fight through the streets of Arnhem to reach their objective. General Model, the German Commander for Army Group B quickly determined the mission of the airborne assault and devised a plan to counter the airborne attack.[76] Despite great personal bravery and tenacious fighting by the 1st Airborne the paratroopers failed to hold the Arnhem bridge until the link-up with ground forces.[77]

This seemed to have been a difficult decision for the FAAA staff to determine where to place the 1st Airborne Division DZ/LZs. Planners thought that the concentration of flak positions in the Arnhem area and the unsuitability of terrain as a LZ constituted an unwarranted risk to the airborne force. The FAAA staff weighed the pros and cons of the each possible decision and decided there would be less risk in landing eight miles from the objective than taking 40% losses on the objective.[78] However, Results show that the FAAA staff did not properly consider the effects of the urban terrain that constrained the movement of the 1st Airborne Division from their drop zones to the objective area and the loss of tactical surprise.

Airborne planners can ensure they do not replicate those who made critical mistakes prior to Operation Market-Garden by properly evaluating the effects of terrain on friendly and enemy courses of action. Market-Garden planners failed to properly judge the terrain and consider the effects on friendly and enemy courses of action. They

failed to identify the canalization and underestimated the ease which German troops would interdict and block routes with relatively small forces.

Good sense and knowledge of the vulnerabilities of airborne operations have to be the guide as current doctrine fails to give answers. FM 90-26, *Airborne Operations*, agrees that the selection of drop zones is a critical event in the planning stage of an airborne operation but provides no guidance on selection criteria other than mathematical equations for the size of DZs based on number of aircraft and numbers of paratroopers.[79] Other field manuals also come to the conclusion that the selection of drop and landing zones are critical but fail to provide guidance on how to make the selection.

Weather

The failure to understand the effects of terrain is inconceivable due to the plethora of information available to planners and decision makers. However, weather provides an inherent chance of failure for those who provide forecasts and advise those who make decisions. According to FM 34-130, *Intelligence Preparation of the Battlefield*, the military aspects of weather are; visibility, winds, precipitation, cloud cover, and temperature and humidity.[80] Except for temperature and humidity these factors were consequential during Market-Garden.

According to Lieutenant General Frederick "Boy" Browning, Deputy Commander of the FAAA and commander of the 1st British Airborne Corps, weather was one of the reasons that Market-Garden's failed.

> The weather had two important influences on the operation. First it hindered resupply, and secondly, it delayed the arrival of reinforcements. The comparative lack of air support for the 1st Airborne Division was due partly to weather and partly to the prohibition of the area to 2nd TAF during the time when airborne forces were flying in.[81]

Weather was excellent and supported both the north and south air axis of advance on D-Day but became a decisive factor for the key period of 18 - 23 September (D+1 to D+6). Because weather was unfavorable for flying, the reinforcement and resupply of airborne units were not accomplished according to a plan that was heavily contingent on the rapid arrival of reinforcements.[82]

Weather effected the 1st Airborne Division most. Their mission to seize and hold the bridge at Arnhem was based on having the combat power of four brigades. Because the FAAA had only enough transport aircraft to lift 1.5 airborne divisions per day and the priority of effort was from the south to north, only two of four 1st Airborne Division's brigades landed on 17 September.[83] The 1st Airborne Division was in General Urquhart's own words, "handicapped" by the decision to land in three lifts.[84] Bad weather caused the 1st Polish Airborne Brigade landing to be postponed from D+2 until D+4. Even then most of the Polish paratroopers failed to reach their planned landing zone due to weather and enemy actions.[85]

Bad weather also effected the ability of the Allied air forces to provide close-air-support to airborne forces and 30th Corps that was attempting to advance on a very narrow avenue of approach. Close-air-support was vital to the success of both forces due to the lack of artillery within range to provide adequate fires to both the airborne forces and the lead elements of the 30th Corps.[86]

Planners recognized that the weather in this area was very unreliable for this time of year and generally did not favor air operations. Weather forecasters briefed General Brereton and his staff at 1630 hours on 16 September that weather would be favorable for

D-Day (17 September) and would be marginally favorable over the preceding four days.[87] Essentially, General Brereton gambled on having favorable weather as it would need to be much better than average for this time of year to fully support the operation.

The failure of weather to support the operation is not as some authors have determined as "bad luck" but rather a gamble that failed. Montgomery and Brereton made the decision to execute Market-Garden based on a staff estimate that there would be one day of favorable and three marginal days of weather. They understood the risks that weather posed to the success of the operation. Montgomery was aware of the risks associated with weather for this operation when he stated, "But weather is always an uncertain factor, in war and in peace. This uncertainty we all accepted."[88]

The effects of weather and terrain on friendly and enemy courses of action were major factors in Operation Market-Garden. There is ample evidence from available intelligence annexes and extracts from after-action reports that Operation Market-Garden intelligence planners conducted detailed IPB. However, these products failed in the evaluation of the information to the effects of terrain on friendly and enemy courses of action. As a result, these failures contributed significantly to the overall downfall of Operation Market-Garden.

Commanders and planners can ensure that they do not succumb to related pitfalls as Market-Garden by fully analyzing the effects of weather and terrain on the friendly and enemy courses of action. They must understand the implications of unintended consequences of a decision on the course of action. Market-Garden commanders gambled that weather would support the operation and did not fully weigh the implications of their decision. Poor weather affected reinforcing and resupplying

airborne forces, especially the 1st Airborne Division and negated a significant Allied advantage, air superiority. The effects of bad weather and terrain were not adequately considered and ultimately led to one of the deadliest operations of World War II.[89]

The Intelligence Cycle For Market-Garden

Operation Market-Garden failed to cross the Rhine River and reaching its goal of eventually breaking through to the Ruhr. Intelligence, according to many historians was the culprit.[90] Eliot Cohen and John Gooch stated that analysts have an exaggerated picture of what intelligence is and can be. They believe intelligence can answer two or three limited questions; "Where is the enemy now?, What is the enemy like? and in some cases, What is the enemy likely to do?"[91] These questions posed by Cohen and Gooch are a good measure of success with which to evaluate Market-Garden intelligence operations.

Another method to analyze Operation Market-Garden intelligence planning is to use the intelligence cycle described in FM 34-3, *Intelligence Analysis*. According to FM 34-3 intelligence operations follow a four-phase process called the intelligence cycle. The four steps of the process are; directing, collecting, processing, and disseminating and using. The cycle is continuous with all steps being conducted concurrently.[92]

Directing

According to the Weapons System Evaluation Group Staff Study 3 (WSEG), the airborne forces were dependent on the established Army and Army Air Force intelligence organizations for raw intelligence. Airborne forces did not have their own organic

intelligence collection organizations and lacked control over the intelligence they received. Market-Garden contrasted from other World War II operations in that the intelligence interest differed from the ground forces because of the great depth that they were directed. As a result timely and detailed intelligence was not available to the airborne force.[93]

Collecting

Intelligence operations during World War II consisted of many of the same types of information sources used by the intelligence community today. Signals intelligence (SIGINT), imagery intelligence (IMINT), and human intelligence (HUMINT) were all integrated into Allied intelligence collection plans. Market-Garden intelligence planners used these three sources of information with varying success.

SIGINT

Ultra collected the majority of the high quality signals intelligence or SIGINT during World War II. Ultra was the code-name of the program that deciphered German military secure radio communications. It provided the Allies reliable information starting in early 1941.[94] It was unique in that Allied decoders were often able to break the code and disseminate the information before the Germans received their own secure messages. Ultra was especially valuable because it decoded the Reich's most secure communications.[95]

Ironically, the first successful use of Ultra information in a ground campaign was against an airborne operation. Ultra intercepted and analyzed Luftwaffe signals two weeks before the Germans executed the airborne landing in Crete.[96] On the morning of

20 May 1941, the British garrison knew when, where, and with what strength General Student's parachutists were going to land. The defenders slaughtered the descending paratroopers and over 4,000 German soldiers, mostly from the 7th Parachute Division died in the operation.[97]

Ralph Bennett made the case in his book, *Ultra in the West*, that there was an abundance of Ultra information with which to determine the presence of two key intelligence indicators that should have stopped or changed Operation Market-Garden. These two indicators were the presence of the II SS Panzer Corps in the Arnhem-Eindhoven area and the movement of a large number of troops into the proposed Market-Garden area of operations.[98]

Ultra decryptions provided the location and missions of the II SS Panzer Corps regularly from 26 August to 16 September. Ultra traced the II SS Panzer Corps's movement eastward through France to when they were directed to move into the Venlo-Arnhem area for rest and refitting on 4 September.[99] Ultra data seldom told everything, and in this case might have received more credence if it gave information concerning the number of operational tanks.

By 7 September Ultra informed Allied intelligence that the German Fifteenth Army improvised ferries to move troops from Walcheren Island to the Dutch mainland. It is likely that Montgomery's 21st Army Group as well as many of the subordinate headquarters knew of the movements of German troops that substantially increased the number of enemy units in the Market-Garden area of operations.[100]

Another key piece of information uncovered by Ultra but not integrated into the overall enemy picture was a message received on 9 September. There was an urgent call

from Army Group B headquarters requesting aerial reconnaissance to determine whether the main Allied attack was going to be in Aachen or at Arnhem.[101] It is inconceivable that this information did not cause apprehension on the part of Allied commanders. Ralph Bennett summed it up quite well when he stated:

> Even Ultra's strong indications that two or more Panzer divisions were quartered on or near the Market-Garden battlefield could not penetrate the wall, 'cemented by confidence, complacency and an uncharacteristic refusal to weigh evidence,' which some of its recipients had erected to protect their presuppositions.[102]

SIGINT provided still more potentially critical information that demonstrated the improvement of the German situation in the Market-Garden area of operations. On 15 September, an Ultra decrypt revealed that Field Marshall Model's headquarters was in Oosterbeek, two miles from the 1st Airborne Division's drop zones.[103]

IMINT

Imagery intelligence or IMINT made a significant contribution to intelligence collection during World War II. Aircraft outfitted with special camera equipment collected imagery intelligence. It was a significant source of information and rated second in both quality and quantity of intelligence produced by all U.S. sources during the war.[104]

IMINT provided potentially vital information that was disregarded by Allied leaders. Major Brian Urquhart, the 1st Airborne Corps's G-2 noticed a remark in a Second British Army INTSUM about the presence of the II SS Panzer Corps in the Arnhem area. Major Urquhart notified his commander General Browning of the situation who became annoyed when Urquhart insisted that the enemy tanks could be a

tremendous danger to the 1st Airborne Division's operation. Nevertheless, General Browning gave Urquhart permission to task reconnaissance aircraft to photograph the area.[105]

Urquhart thought it was essential to convince Browning of the dangers faced by the presence of an SS Panzer Corps in the area and requested low altitude oblique photos on 12 September. Because of bad weather only eight aircraft flew on 12 and 16 September and relatively few high value photos were taken.[106] However, the photos showed German tanks and armored vehicles parked under the trees, many that were within easy reach of the planned 1st Airborne Division drop zones.

General Browning disagreed with the significance of the evidence and treated Urquhart like "a nervous child." Later in the day the 1st Airborne Corps chief surgeon visited Major Urquhart and informed him that he was suffering from an acute nervous strain and exhaustion. As a result of his insistence, Urquhart faced mandatory sick leave or disciplinary measures.[107] This reaction to credible evidence showed that Browning was willing to accept disturbing risks to "not cancel the party."

HUMINT

HUMINT is the oldest of the intelligence disciplines and includes all information collected from human sources. HUMINT at the operational level consists of interrogations of prisoners of war, exploitation of enemy documents, special reconnaissance and covert missions.[108] Planners for Operation Market-Garden used HUMINT derived from what today is considered both special reconnaissance and covert methods.

Allied forces employed special trained three man teams to work with the resistance units behind enemy lines. These teams were code named Jedburgs.[109] The Special Operations Executive (SOE) which supervised the Allied clandestine effort started the concept in 1942. Their mission was to advise and assist partisan forces and synchronize their efforts with Allied operations. By the spring of 1944 over 70 Jedburg teams were available for action. Approximately 93 teams infiltrated behind enemy lines into France prior to the execution of Market-Garden in September 1944.[110]

SHAEF designated the Special Forces Headquarters (SFHQ) of the SHAEF G-3 responsible for coordinating the activities of the Jedburg teams. Each army group headquarters and field army assigned a Special Forces detachment to monitor and direct the activities of the Jedburg teams in their area of operations.[111] Five Jedburg teams deployed in support of Operation Market-Garden. Of the five teams, only "Team Dudley" dropped into Holland prior to D-Day. The other Jedburg teams dropped with their respective elements on D-Day.[112]

The Jedburg mission during Market-Garden was to contact the Dutch resistance and report through their respective units to the 21st Army Group intelligence developments, to requisition transportation, eliminate Dutch Nazi sympathizers, and prevent Dutch civilians from moving into the area. The overwhelming success of the German Abwehr's counter-intelligence program named "Operation Nord-Pol" complicated the use of HUMINT for Market-Garden. Nord-Pol resulted in the capture of nearly 50 SOE agents and an unknown number of Dutch Underground from December 1941 to 1943. The SOE finally learned of the level of the compromise when two agents escaped from the Haaren Concentration Camp and made their way back to London.[113]

Because of the success of Operation Nord-Pol, SOE did not infiltrate agents into Holland again until after the Normandy invasion.[114]

The Allies had a lack of confidence with the intelligence provided by the Dutch Underground before Market-Garden because of "Nord-Pol.". This was unfortunate as the Dutch Underground provided potentially valuable information that Market-Garden planners disregarded. The Dutch Underground passed information to the British Second Army headquarters concerning "battered panzer divisions believed to be in Holland to refit."[115] According to General Strong, the SHAEF G2, he had very little confidence in the report and did not use it in the weekly intelligence summary.[116]

Another consequence of Operation Nord-Pol was the absence of volume in reporting from the Dutch Underground. The lack of reporting combined with the question of reliability restricted Allied planners in their use of this beneficial source of information. The threat of compromise to the mission affected the ability of Allied intelligence to task the Dutch Underground for specific intelligence requirements.

The Dutch Resistance was able to provide valuable tactical intelligence to units deployed to Holland for the airborne portion of the operation. For example, the 82nd Airborne Division was very fortunate to have the services of Captain Bestebreurtje whose home town was Nijmegen, one the "All American's objectives. Bestebreurtje, a member of Team Clarence provided successful liaison with the Dutch Resistance that provided invaluable tactical intelligence and operational support to the 82nd Airborne Division and the 1st Airborne Corps during the battles in Nijmegen and Grosbeek.[117]

Bestebreurtje also provided intelligence planners in the 82nd Airborne outstanding tactical information concerning the military characteristics of the terrain and

weather in the vicinity of Nijmegen. Evidence exists to indicate that the Dutch Underground provided valuable HUMINT to the 82nd Airborne Division before Market-Garden. Although no source is named, the 82nd Airborne Division's pre-Market-Garden intelligence annex contains detailed sketches of German defenses and bridge demolitions in the Nijmegen area. The detail of these drawings leads one to believe the source of this information was HUMINT, probably Dutch resistance.[118]

HUMINT was of limited value to Operation Market-Garden because of the lack of contact with the Dutch resistance before the operation. If Jedburg teams were inserted into Holland 30-60 days prior to Market-Garden to develop sources and a communications network then intelligence planners could have relied on tasking Allied teams. HUMINT may have been able to provide an accurate assessment of the capabilities of the SS Panzer divisions in the Arnhem area. This arguably was the most critical information needed by the Allies before Market-Garden.

Only the airborne forces in Market-Garden used Jedburgh teams. General Horrocks commented that the absence of a Dutch liaison to his 30th Corps was a grave mistake.

> I blame myself for one oversight. I cannot now imagine why I did not insist on having a high-ranking Dutch officer at my H.Q. The Dutch Army must have carried out numerous exercises over this same ground. I believe that he would have advised me not to attempt the direct approach from Nijmegen to Arnhem, but to order the 43rd Infantry Division to cross the Waal farther to the west of Nijmegen, and carry out a left hook against the German forces on the western edge of the airborne perimeter. The Dutch had a brave and a very intelligent resistance movement, which supplied us with first-class information. Somehow I don't feel we made the best use of it.[119]

General Horrocks's comments illustrate the importance of liaison officers, not only to coordinate operations but because of their unique knowledge of the area and ability to assist with the planning and decision making processes.

XVIII Airborne Corps intelligence planners can learn a great deal from the successes and failures of HUMINT in Market-Garden. The success of HUMINT is dependent on the early deployment of agents so they can develop reliable sources and be fully integrated into the collecting phase of an operation. This is a time intensive process where shortcuts may lead to false or inaccurate reporting and possibly the capture or death of agents.

The collecting phase of Operation Market-Garden was marginally successful. Sources provided information that cued another source to collect in a specific area. An example of this was Ultra information providing information that directed a more accurate point-target sensor, aerial reconnaissance to confirm the presence of the II SS Panzer Corps in the Arnhem area. However, Allied intelligence failed because sufficient evidence was not available to prove to commanders that the tanks seen on imagery were operational. What Allied intelligence needed was HUMINT to verify the human dimension of war, that the II SS Panzer Corps still had the quality that had made them infamous, their fanatical fighting spirit.[120]

Processing

Processing is the phase in the intelligence cycle where information is synthesized into intelligence. Recording, evaluation and analysis are done concurrently as part of the processing phase.[121] According to FM 34-3, *Intelligence Analysis*, evaluation is the

determination of how important the information is in relation to the operation and determines the reliability or accuracy of the source. Analysis judges if the information deduces the probable meaning of the evaluated information.[122] This section of the monograph evaluates how the impact of processing affected the outcome of Operation Market-Garden.

Eisenhower, Montgomery, and Brereton knew the 9th and 10th SS Panzer Divisions were in the Arnhem area but underestimated their capabilities.[123] SHAEF Weekly INTSUMs on 2, 9, and 16 September gave increasingly accurate information on the enemy in the three weeks before Market-Garden. By 16 September Allied intelligence accurately depicted the German first and second operational echelons along the Holland-Belgium border and the reorganization of forces under German Army Group B. Intelligence reported several key items that indicated the German army would provide effective resistance to the Allied operation. The SHAEF INTSUM of 16 September accurately portrayed the movement of the Fifteenth German Army across the Schledt estuary and the arrival of the First Parachute Army in the area.[124] The 82nd Airborne Division's intelligence annex also provided a very clear account of German capabilities.

> There is little doubt that the enemy had made a remarkable recovery within the last few days, at any rate in the 21st Army Group area. ... A captured document indicates that the degree of control exercised over the re-grouping and collecting of the apparently scattered remnants of a beaten army were little short of remarkable. Furthermore, the fighting capacity of the new Battle Groups formed from the remnants of battered divisions seems unimpaired.[125]

Intelligence processing for Market-Garden was successful. The assessment of the information, the integration of the information to form a logical picture, and the

deduction of: "What does this information mean in relation to the enemy situation?" were accurate.[126] Allied intelligence was aware of key enemy indicators that should have contributed to changing the plan or canceling the operation. These indicators were: strengthening of enemy command and control, presence of Panzer SS units in Arnhem, and the appearance of many additional forces in the area. That these facts failed to convince decision makers was the *real* failure of intelligence for Market-Garden.

Dissemination

The final step in the intelligence cycle is to disseminate intelligence. Successful intelligence dissemination communicates the results of analysis to decision makers in time and in the right format to make prudent decisions.[127] Prior to Operation Market-Garden, G2s gave accurate and timely intelligence to decision makers but failed to convince their commanders of the Germans capabilities. Although Montgomery was willing to change the original plan by adding additional airborne forces he was not prepared to discard the plan in spite of obvious intelligence because of his preconceived notion that Germany was already defeated.

An additional problem with dissemination was subordinate headquarters disagreeing with higher headquarters intelligence assessments. Eisenhower's G2 staff believed the II SS Panzer Corps would be in the Arnhem area but the 21st Army Group did not concede that the SS divisions could provide any resistance and therefore failed to mention them in the estimate.[128] This disagreement explains why subordinate commanders such as General Horrocks at 30th Corps were unaware of the II SS Panzer Corps in Arnhem.[129]

The most grievous omission of intelligence dissemination concerns the failure of the 1st British Airborne Corps to notify the 1st Airborne Division that tanks were near his objective. This is difficult to understand considering General Browning knew the Panzer SS units were in Arnhem. Browning told General Urquhart that his division could expect to meet only about 2,000 SS recruits supplemented by Luftwaffe ground troops from the Deelen airfield that was about seven miles away and failed to mention the 9th and 10th SS Panzer Divisions.[130] Dissemination of intelligence for Market-Garden was marginally successful. Not all units received the same information due to differing opinions by intelligence staffs and commanders concerning the II SS Panzer Corps in Arnhem and the assessment of the reorganization of the German army in the Market-Garden area of operations. In many cases and notably demonstrated by the 1st British Airborne Corps, senior commanders deliberately withheld valuable intelligence from subordinate units.

Conclusions

Market-Garden was not as Allied leaders called a "partial success." It was a dismal failure. Allied casualties were over 17,000, or more than the Overlord Operation and it gained only a useless 50 mile salient that led nowhere.[131] Montgomery's biographer, Nigel Hamilton wrote: "Monty's bid for the Ruhr via Arnhem had proved nothing less than foolhardy. It was an expensive, squandering of men and materiel."[132]

Bad intelligence and worse luck are often stated as reasons why Market-Garden failed. This is the logic of historians that do not understand the relationship between intelligence and the command decision making process. Market-Garden failed because Montgomery did not heed the advice of his staff and subordinate commanders.

"Arrogance, impatience for action, and refusal to adjust to a hastily frozen plan" also contributed to the decision to conduct an unsound operation.[133]

Montgomery and his senior commanders had adequate intelligence with which to make their decisions. IPB was accurate and anticipated the terrain constraints that 30th Corps would face in their critical 64 mile link-up with the three airborne divisions. Montgomery also understood that the airborne operation required favorable weather but that it would not likely be coming. He gambled on the terrain and weather and lost because of his assumption that a relatively weak and disorganized enemy would overcome any negative operational impacts caused by weather and terrain.

Intelligence estimates were also increasingly pessimistic concerning the possibilities of failure. Allied G2's made decision makers aware of the following intelligence that should have stopped or changed Operation Market-Garden:

- 9th and 10th SS Panzer Divisions refitting in Arnhem
- 15th Army reinforcing the area of operations
- Reorganization of the German forces under the command of Model

Allied intelligence for Operation Market-Garden was accurate. It predicted enemy locations, approximate strengths, and the German's abilities to defend. However, in many cases senior leaders scoffed at or ridiculed their G2's intelligence estimates.[134]

XVIII Airborne Corps intelligence planners can avoid the same mistakes as Market-Garden planners by applying the doctrine that has stood the test of time. Intelligence planning must play a substantial role in the design of a military operation. "Intelligence was a secondary aspect of planning for the operation -- not unreasonable in

consideration of the generally held view of the western Allies that the Germans were beaten."[135]

To be effective, commanders should focus the intelligence effort by ensuring that intelligence operations support the commander's concept of the operation. Commanders and their staff's must also integrate IPB with the combat environment as well as the enemy's capabilities and doctrine. They can not allow emotions like the euphoria to finish the war quickly, that overcame the commanders and staffs of the 21st Army Group.

It is critical that airborne forces control their own intelligence assets. Airborne intelligence needs are often unique from the remainder of the joint force. Their intelligence requirements often diverge from those of the ground force because of the distances from their respective objectives and airborne's priority on terrain, weather, and enemy air defenses. Collection managers must ensure that their collection requirements are received and understood by the higher headquarters when organic assets are not able to provide needed intelligence.

The one significant intelligence failure of Market-Garden was the inability of the Allies to persuade their leaders of the level of the enemy's ability to resist. Major General Strong, the SHAFE senior intelligence officer, commented on his inability to convince Montgomery of the German's determination,

> Our information was sufficient for me to utter a warning--intelligence can seldom much do more than that -- of potential danger from armoured troops. After that it is up to the decision makers and there is no guarantee that they will heed the Intelligence people.[136]

The most difficult problem for an intelligence officer to overcome may be to change the opinion of a senior commander. B. H. Liddell Hart summed up the problem

when he said, "There are over two thousand years of experience to tell us that the only thing harder than getting a new idea into the military mind is to get an old one out."[137] This problem was especially difficult because Allied leaders were confident that the Germans would be defeated as easily as they had during the previous month of August. Planners and especially commanders and senior staff need to maintain an open mind to new ideas and not be strangled by the ineffectiveness of their old ideas.

Intelligence professionals must give their commander an unbiased, realistic view of how to view the enemy. The role of the intelligence officer is to provide a straight, no nonsense view of the situation based on analysis, judgment, and intuition. Intelligence must paint the picture for our commanders as it is, not as we or they wish it to be.[138]

It is ultimately the commander's decision, not the G2's decision to commit to a specific course of action. Montgomery was responsible for the decision to execute Operation Market-Garden. Had he been successful, his name may have gone down in history as a greater commander than Wellington. Instead his failure was a grave indictment of his generalship.[139]

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D-Day, 16-17 September 1944

Number of A/C	Type of A/C	Mission	Losses
200	Lancaster	Enemy Airfields	0
23	Mosquito	Enemy Airfields	0
54	Lancaster	Anti-Flak	2
5	Mosquito	Anti-Flak	0
85	Lancaster	Anti-Flak	0
15	Mosquito	Anti-Flak	0
53	Spitfires	Escort	0
6	B-17	Enemy Airfields	0
816	B-17	Anti-Flak	2
161	P-51	Escort	0
18	Troop Transport	Combined Pathfinder Force	0
145	Troop Transport	Paratroopers 1st Airborne Div.	0
358	Glider Transports	Glider Troops 1st Airborne Div.	0
424	Troop Transport	Paratroopers 101st Airborne Div.	17
70	Glider Transports	Glider Troops 101st Airborne Div.	6
480	Troop Transports	Paratroopers 82nd Airborne Div.	18
50	Glider Transports	Glider Troops 82nd Airborne Div.	7
548	P-47, P-38, P-51	Escort/Fighter 8th Air Force	13
212	Various aircraft	Escort/Fighter 9th Air Force	2

Source: First Allied Airborne Army Report, December 1944

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D+1, 18 September 1944 (Only the northern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
127	Troop Transport	Paratroopers 1st Airborne Div.	0/0
33	Supply Transport	Resupply 1st Airborne Div.	0/0
296	Glider Transports	Glider Troops 1st Airborne Div.	3/1
450	Glider Transports	Glider Troops 101st Airborne Div.	11/10
454	Glider Transports	Glider Troops 82nd Airborne Div.	11/9
259	Spitfire, Tempest, Mustang, Mosquito	Escort/Fighter GBAD	6/0
415	P-47, P-31	Escort/Fighter 8th Air Force	17/0
252	B-24	Resupply - 82nd and 101st Airborne	7/0
192	P-47, P-38, P-51	Escort/Fighters 8th Air Force	0/0

Source: First Allied Airborne Army Report, December 1944

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D+2, 19 September 1944 (Only the northern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
165	Supply Transport	Resupply 1st Airborne Div.	13/0
44	Glider Transports	Glider Troops 1st Polish Brigade	0/0
61	Supply Transports	Resupply 82nd Airborne Div.	25/0 *142 resupply aircraft were scheduled but only 61 took off due to weather restrictions*
384	Glider Transports	Glider Troops 101st Airborne Div.	0/73 *only 212 gliders arrived due to bad weather*
127	Spitfire	Escort/Fighter GBAD	6/0
123	P-47	Escort/Fighter 9th Air Force	0/0
182	Mustang	Escort/Fighter 8th Air Force	17/0

Source: First Allied Airborne Army Report, December 1944

D+3, 20 September 1944 (Only the southern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
164	Supply Transport	Resupply 1st Airborne Div.	9/0 *Flak in Arnhem area was very heavy and accurate*
356	Supply Transport	Resupply 101st Airborne Div.	0/0 *Most supplies fell into German hands*
248	Spitfire	Escort/Fighter GBAD	3/0
43	P-47	Fighter/Bombers	0/0
679	Mustang	Escort/Fighter 8th Air Force	5/0

Source: First Allied Airborne Army Report, December 1944

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D+4, 21 September 1944 (Only the southern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
117	Supply Transport	Resupply 1st Airborne Div.	23/0
177	Troop Transport	Paratroopers 1st Polish Brigade.	5/0
137	Spitfire	Escort/Fighter GBAD	0/0
95	P-47, P-51	Fighter/Bombers	3/0

Source: First Allied Airborne Army Report, December 1944

D+5, 22 September 1944 (Only the southern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
79	P-47 8th Air Force	Fighter	0/0

Source: First Allied Airborne Army Report, December 1944

No troop carrier or resupply operation were possible due to the severity of the weather.

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D+6, 23 September 1944 (Only the southern route was used due to weather constraints.)

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
123	Supply Transport/ Troop Transport	Resupply Paratroopers 1st Airborne Div.	0/0 *Most supplies fell into German hands*
41	Troop Transports	Paratroopers 1st Polish Bde	8/0
490	Glider Transport	Glider Troops 82nd Airborne Div. 101st Airborne Div.	1/32
193	Spitfire	Escort/Fighter GBAD	2/0
75	P-47	Escort/Fighter 9th Air Force	0/0
586	Mustang	Escort/Fighter 8th Air Force	0/0

Source: First Allied Airborne Army Report, December 1944

D+7, 24 September 1944

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
4	Supply Transport	Resupply 1st Airborne Div.	0/0 *All aircraft were damaged by flak All supplies fell into German hands*
17	Supply Transport	Resupply 82nd Airborne Div.	0/0 *2 aircraft landed on a prepared airfield at Grave*
36	Spitfire	Escort/Fighter GBAD	0/0

Source: First Allied Airborne Army Report, December 1944

Appendix A: Allied Aircraft Missions for Operation Market-Garden

D+8, 25 September 1944

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
7	Supply Transport	Resupply 1st Airborne Div.	1/0
34	Supply Transport	Resupply 101st Airborne Div.	0/0
97	Spitfire	Escort/Fighter GBAD	0/0

Source: First Allied Airborne Army Report, December 1944

D+9, 26 September 1944

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
209	Supply Transport Troop Transport	Resupply/ Reconstitute 1st Airborne Div.	0/0 *All units landed at the airfield at Grave*
173	Misc. Fighters	Escort/Fighter 8th Air Force	1/0
182	Spitfire	Escort/Fighter GBAD	0/0

Source: First Allied Airborne Army Report, December 1944

No aircraft were dispatched on D+10 and D+11, 27 -28 September due to severe weather.

D+12 and D+13, 29-30 September

Number of A/C	Type of A/C	Mission	Aircraft/Gliders Losses
33	Supply Transport Troop Transport	Resupply/ Reconstitute 1st Airborne Div.	0/0 *All units landed at the airfield at Grave*

Source: First Allied Airborne Army Report, December 1944

Appendix A: Allied Aircraft Missions for Operation Market-Garden

Totals for Operation

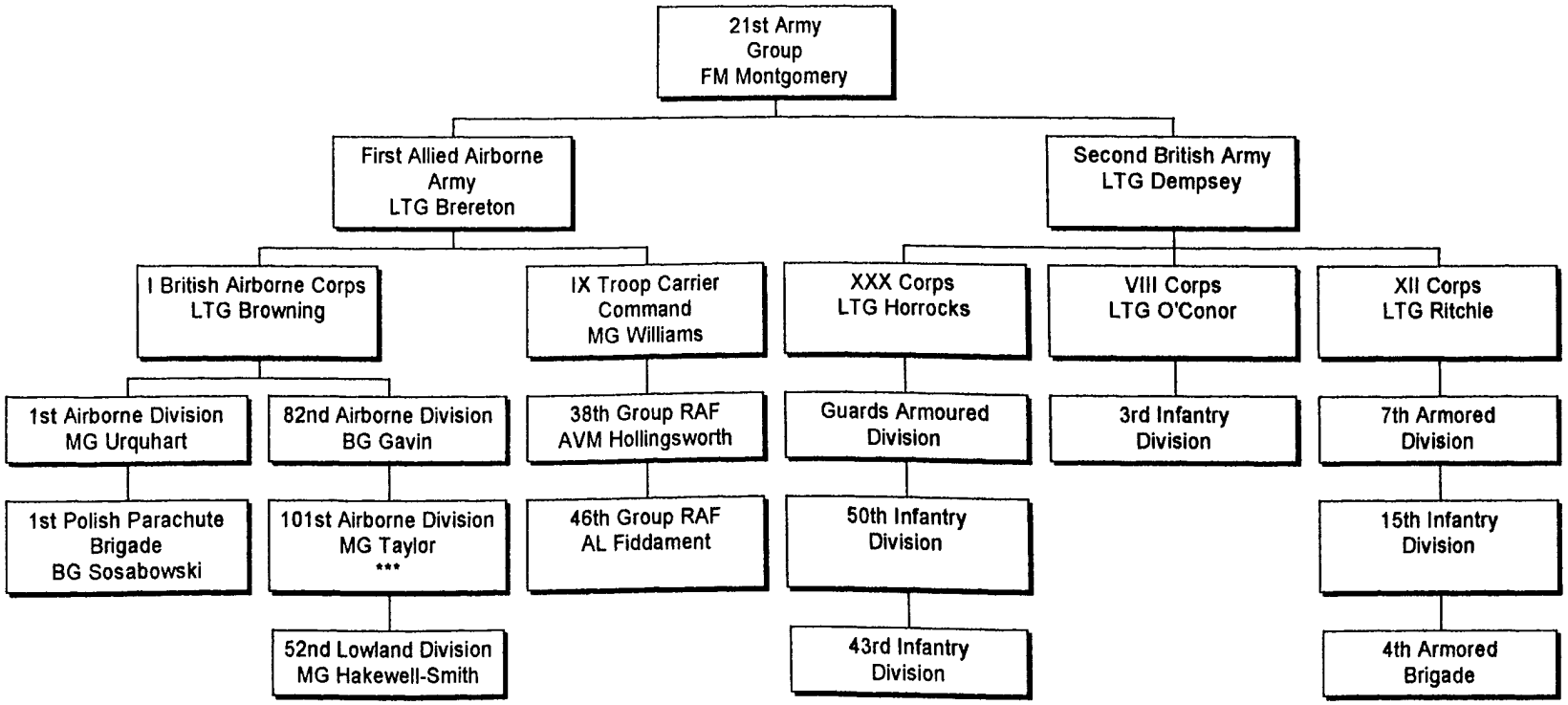
Number of parachutist dropped	20,190
Number of troops landed by glider	13,781
Number of troops flown in by airplane	905.
Total number of airborne troops flown in by cargo plane, glider, or parachutist	34,876

Total number of aircraft shotdown by category:

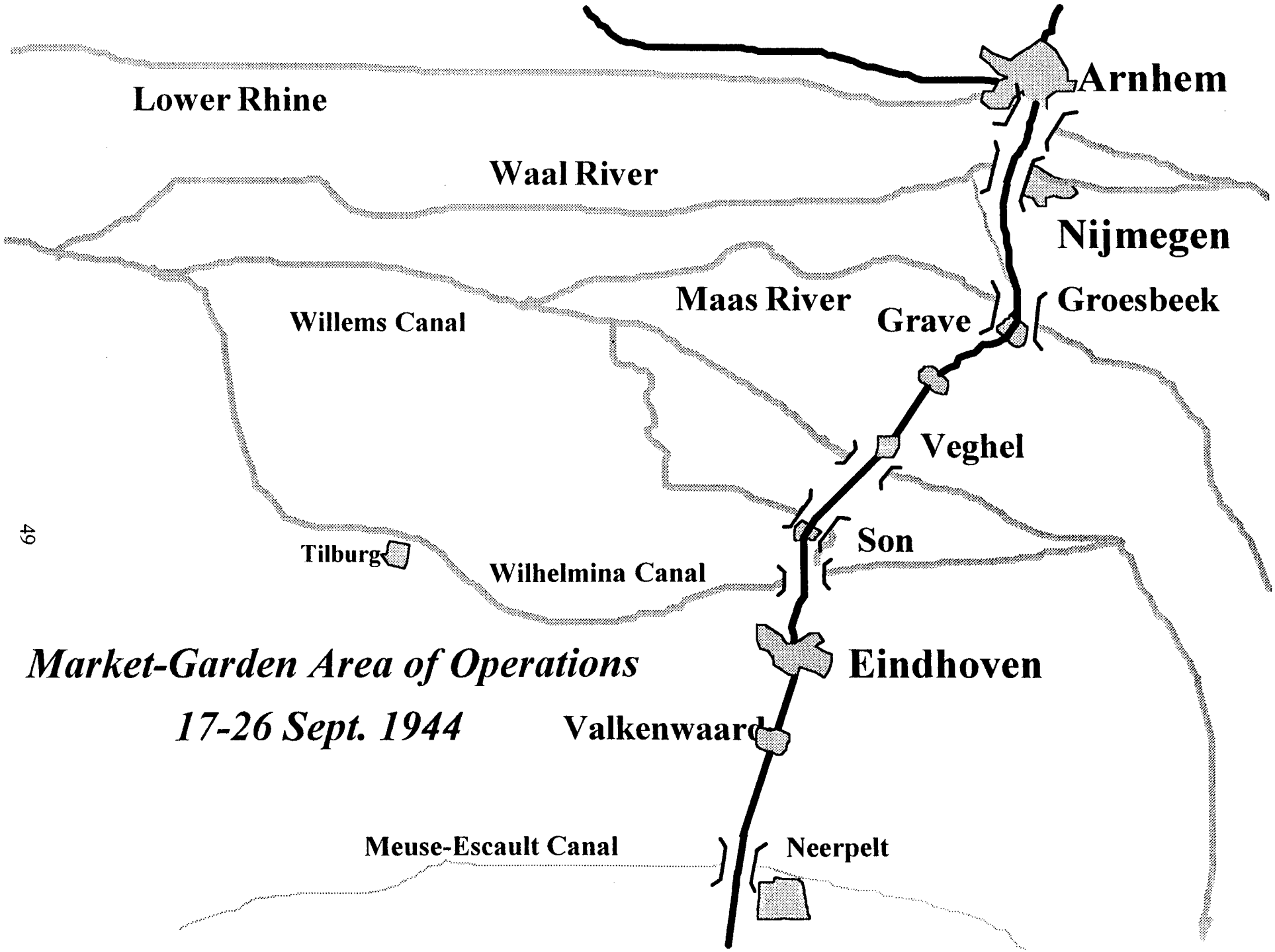
Transport Aircraft (Paratroopers)	48
Glider Transports	39
Gliders	126
Bomber Aircraft	4
Resupply Aircraft	78
Escort Aircraft/CAS	74
Total Aircraft Shotdown	369

Source: Allied Airborne Operations in Holland: September-October 1944. 3-4.

Operation Market-Garden:
Organization Chart - 17 September 1944

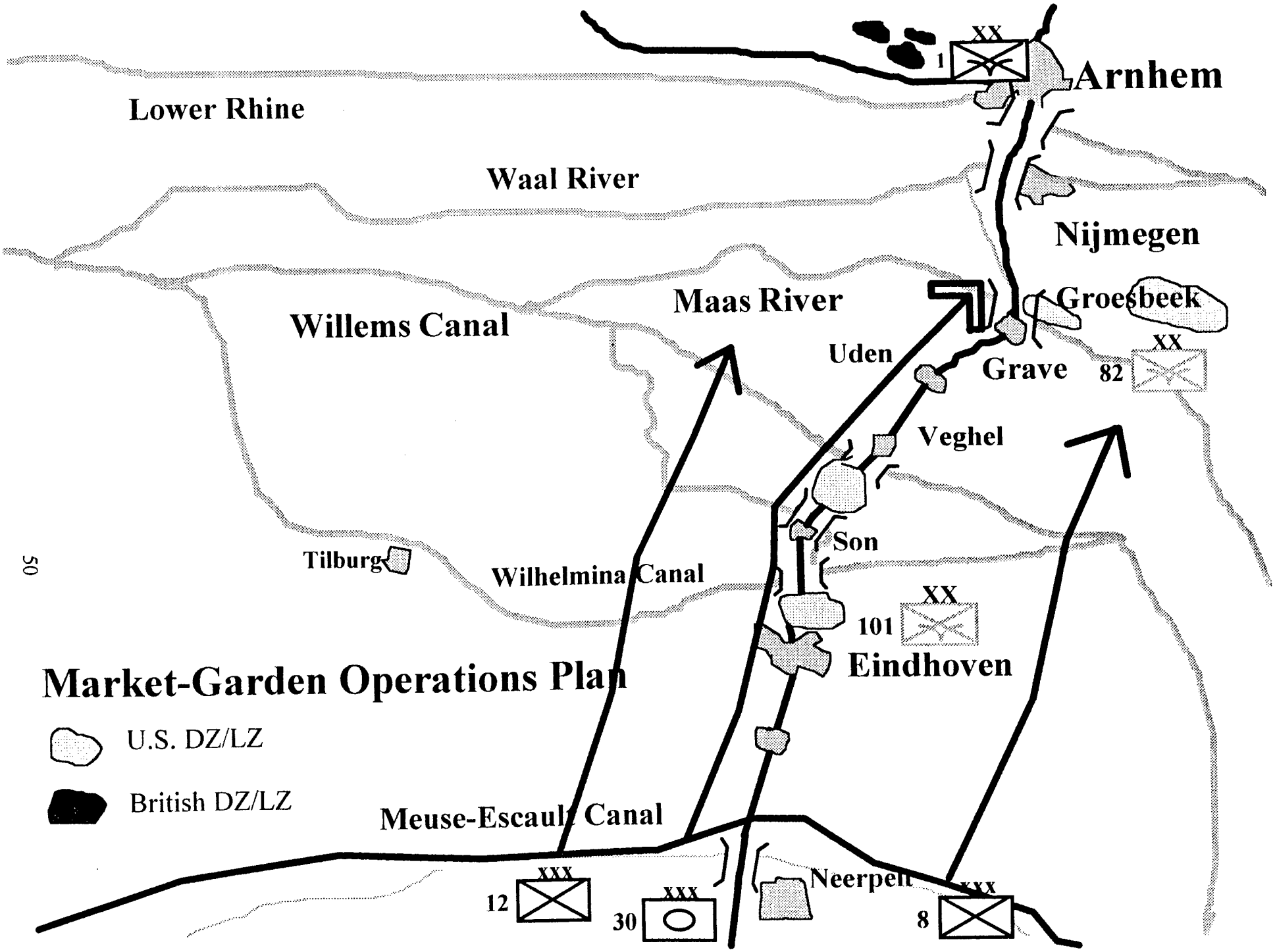


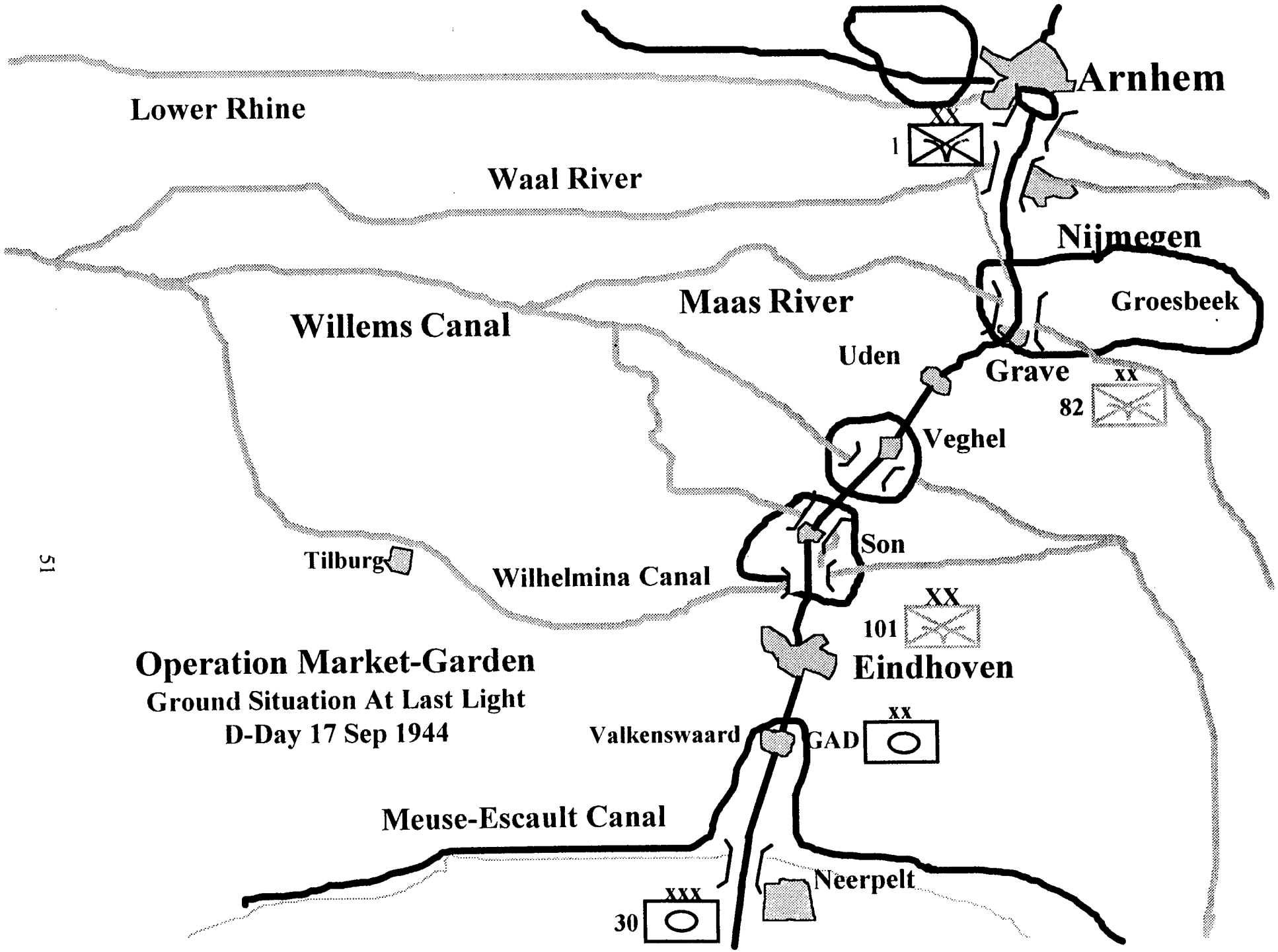
*** 101st Airborne Division was subordinate to 30th Corps after completing the airborne portion of their mission.



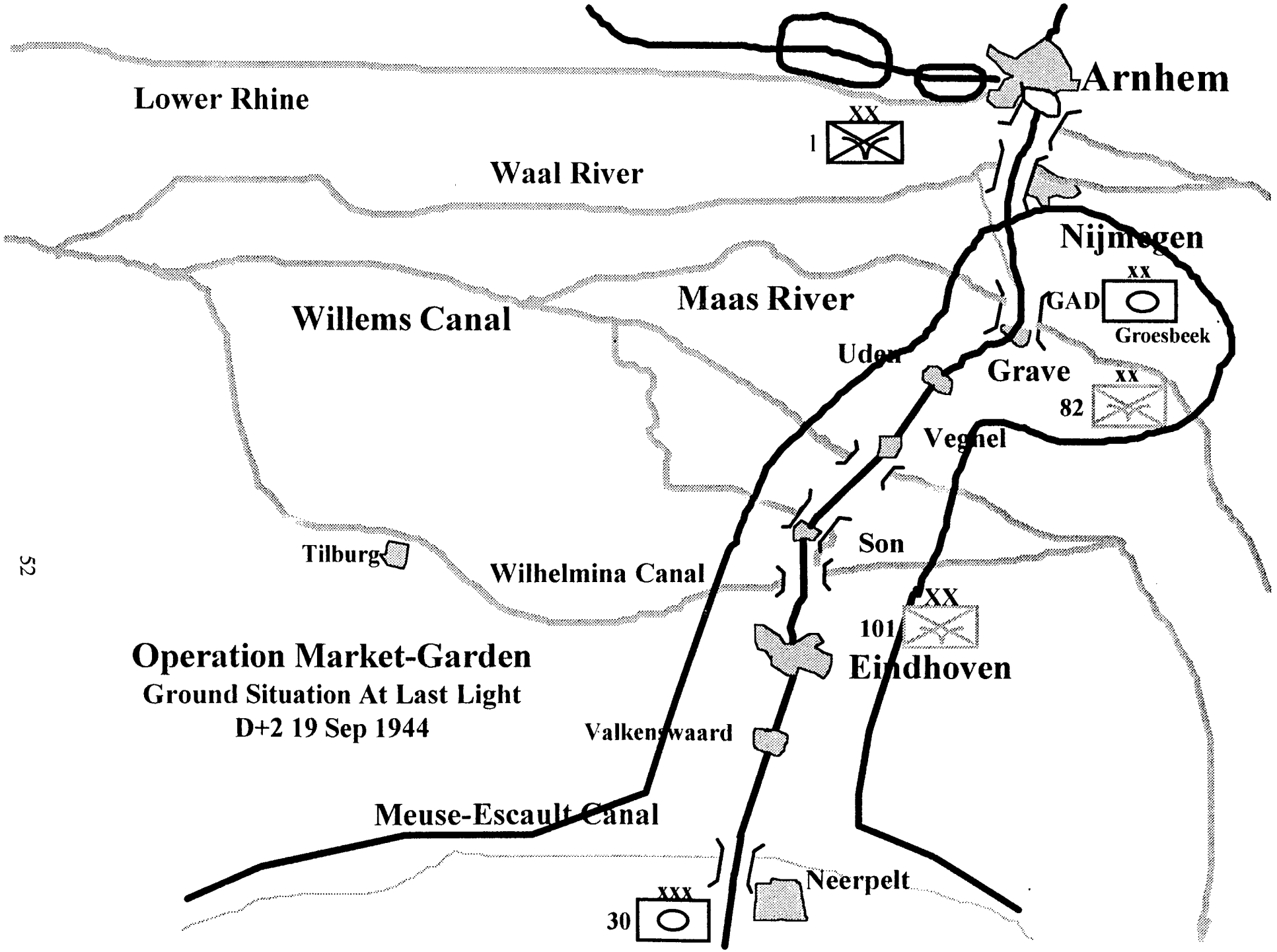
Market-Garden Area of Operations

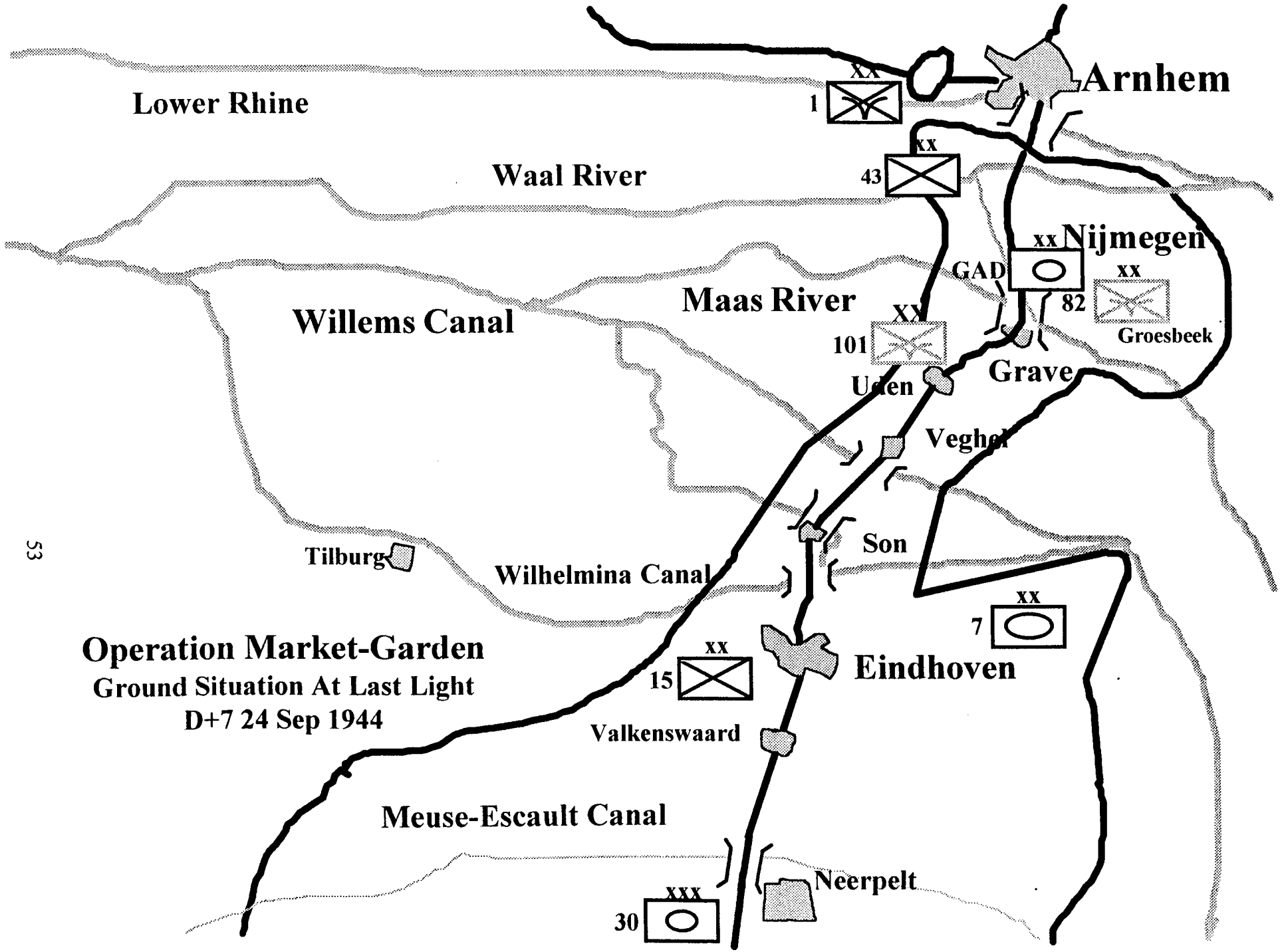
17-26 Sept. 1944


Lower Rhine
Waal River
Arnhem
Nijmegen
Maas River
Groesbeek
Willems Canal
Uden
Grave
82
XX
Veghel
Son
Tilburg
Wilhelmina Canal
XX
101
Eindhoven
Market-Garden Operations Plan
U.S. DZ/LZ
British DZ/LZ
Meuse-Escaut Canal
XXX
12
XXX
30
Neerpelt
XXX
8



Operation Market-Garden
Ground Situation At Last Light
D-Day 17 Sep 1944


Lower Rhine
Arnhem
XX
1
Waal River
Nijmegen
XX
GAD
Groesbeek
Maas River
Willems Canal
Uden
Grave
XX
82
Vegel
Tilburg
Son
Wilhelmina Canal
XX
101
Eindhoven
Operation Market-Garden
Ground Situation At Last Light
D+2 19 Sep 1944
Valkenswaard
Meuse-Escault Canal
Neerpelt
XXX
30



Operation Market-Garden
Ground Situation At Last Light
D+7 24 Sep 1944

End Notes

[1] Brereton, Lewis H., The Brereton Diaries: The War in the Air in the Pacific, Middle East and Europe. New York, 1946, 309. General Billy Mitchell gave the mission to plan this operation to a young staff officer named Brereton, later the commander of the First Allied Airborne Army during Operation Market-Garden.

[2] Huston, James A., Airborne Operations: The United States Army in World War II. Office of the Chief of Military History, Washington, DC: (date unknown). I-5.

[3] Microsoft Corporation, Encarta 95': The Complete Interactive Multimedia Encyclopedia, 1995. Three quarters of the world's population took part (directly or indirectly) in Word War II, from total 61 countries with 1.7 billion people. 110 million people were mobilized, 16 million alone in the United States during the war. It is estimated that World War II cost more in human lives and money than all the previous war combined, an estimated $1 trillion and 25 million military and 30 million civilian deaths. World War II also cost the world its balance of power. At the end of the war, Britain, Japan, and France and Germany ceased as great powers and only the Soviet Union and the United States remained.

[4] John Keegan, The Second World War. New York, 1989, 34.

[5] Ibid, 38-44.

[6] Ibid, 86. The Germans presented the armistice terms to France on 21 June 1940 in the same railway coach as the Germans signed the World War I treaty in 1918. Although the Germans were very successful with their Blitzkrieg campaign in France, they failed to close the trap at Dunkirk. The last ship left Dunkirk perimeter on 4 June 1940. Approximately 337,000 soldiers were saved from capture. This number included most of the manpower of the British Expeditionary Force (BEF) and 110,000 French soldiers. Keegan, *The Second World War*, 80-81.

[7] Huston, I-3, Also see Len Deighton, *Blitzkrieg*, 1979, 192. Russian troops may have been the first to use airborne forces in combat operations during the 1939 Russo-Finish War. James M. Gavin, *Airborne Warfare*. Washington, D.C: 1947, ix.

[8] Carlo D'Este, Decision in Normandy, New York, 1983, 104.

[9] First Allied Airborne Army, Allied Airborne Operations in Holland, September - October 1944: Report on Operations "Market" and "Garden," Comments on the Operations and Requirements for the Future. Written between 10 October 1944 and 18 February 1945. 4-5. Hereafter referred to as *AAOH*. Also see Appendix

1, *Air Operations to Support Market-Garden* of this monograph for detailed information concerning the numbers of air sorties flown in support of Market-Garden..

[10] First Allied Airborne Army, Airborne Operations in Holland: September - November 1944. (Market). Report to Supreme Commander, Allied Expeditionary Force, Copy 73, 22 December 1944, 15. Hereafter referred to as *FAAA Report*. The actual numbers of soldiers that participated in 'Market' is 20,190 paratroopers and 13,781 and glider troops. This number is almost double the number of airborne forces used during the D-Day invasion of Normandy. Ryan, *A Bridge Too Far*, 122.

[11] Cornelius Ryan, A Bridge Too Far, New York, 1974, 11.

[12] AAOH, 6. The final appraisal of the enemy situation was, "the flight and landings would be hazardous, that the capture of the bridge objectives was more a matter of surprise and confusion, and that the advance of the ground forces would be very swift if the airborne operations were successful." This quotation comes from a section named *Intelligence Notes, The Course of Events Up to the Time of the First Airborne Landings*, and is reputably a section lifted from the FAAA pre-Market-Garden intelligence summary.

[13] Ryan, 599. Casualties for the Market-Garden for the 1st Airborne Division were 6,986 plus 383 paratroopers from the 1st Polish Parachute Brigade. *FAAA Report*, 50.

[14] Ibid, 572. General Urquhart, commander of the 1st British Airborne Division received the order from the 1st Airborne Corps commander, LTG Browning to withdraw the remainder of his troops from the Oosterbeek perimeter with the assistance of the 1st Polish Parachute Brigade and the 43rd Wessex Infantry Division. Only 2,163 of the original 10,500 "Red Devils" escaped.

[15] U.S. Army, FM 90-26, Airborne Operations, Headquarters, Department of the Army, Washington DC: December 1990, 1-4.

[16] Ibid.,

[17] Ibid.,

[18] Ibid, 1-5.

[19] Ibid, 1-4.

[20] U.S. Army, FM 100-27/AFM 2-50, USA/USAF Doctrine for Joint Airborne and Tactical Airlift Operations. Headquarters, Department of the Army and the Air Force, Washington, DC: January 1985, 3. There was great debate during World War II over the lack of ability of the airborne force to defend against an armored counterattack. Brigadier General James Gavin, then the Assistant Division Commander of the 82nd Airborne Division wrote in a report just prior to the D-Day invasion, "Give us anything that will stop the German Tiger Tank as a counterattack by them is the first thing that will hit us after we jump." Huston, *Airborne Operations: The United States Army in World War II.* VI-10. The debate continues today and is considered one of the greatest weaknesses of the airborne concept. In 1996 the 82nd Airborne Division eliminated armor forces from their force structure. Currently, anti-armor capability in the division consists of hand-held anti-tank weapons (Javelin), helicopters, and the High Mobility Multipurpose Wheeled Vehicle (HMMWV) mounted with TOW-2B anti-armor missiles. U.S. Airborne divisions were equipped with an anti-tank battalion which used 57mm guns as their primary weapon system. *Weapons Systems Evaluation Group Staff - Study No. 3,* 101.

[21] FM 90-26, 1-8.

[22] Joint Publication 2-0, Doctrine for Intelligence Support to Joint Operations, Joint Staff, Washington, DC: 1993, 79.

[23] U.S. Army, Student Text 101-5, Command and Staff Decision Processes, U.S. Army Command and General Staff College, Ft. Leavenworth, KS, February 1996, 1-4.

[24] Weapons Systems Evaluation Group (WSEG) Staff Study Number 3. A Historical Study of Some World War II Airborne Operations. 20 February 1951, 59, Hereafter referred to as WSEG.

[25] James M. Gavin, Airborne Warfare. Washington, D.C: 1947, 81. First Allied Airborne Army planners used the same considerations listed by General Gavin with one additional factor, the principle of concentration of the airborne force (mass). *FAAA Report,* 12.

[26] U.S. Army, Draft FM 90-XX, Forcible Entry: Multi-Service Procedures for Forcible Entry Operations, Joint Staff, Washington, DC: October 1993, VI-12.

[27] Stephen E. Ambrose, Ike's Spies, Eisenhower and the Espionage Establishment,. Garden City, NY., 1981, 130.

[28] Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 23. Assistant Chief of Staff for Intelligence, 26 August 1944, 4. Hereafter referred to as SHAEF INTSUM 23. This passage is frequently quoted

but normally incompletely. The first and last sentences are usually all that are included in documents. Incomplete quotes from SHAEF INTSUM 23 give more of an impression of total optimism than actually exists in the INTSUM. The entire INTSUM should be read to understand that the writer of this section used a great deal of poetic license to describe German capabilities. His writing demonstrates a feeling of jubilance over the prospects of a quick Allied victory. Other INTSUMS during this period take on a less dramatic and although an optimistic view, not one that spells impending doom for Germany.

[29] 21st Army Group, Operation "Market Garden," 17-26 September 1944. 10 May 1946, 2. Hereafter referred to as *21st Army Group*. The British lines of communication were more than 400 miles long at the time of the decision to execute Market-Garden. The 21st Army Group is also sometimes referred to as the Northern Group of Forces.

[30] Charles B, McDonald, The Decision to Launch Operation Market-Garden. Kent R. Greenfield, Ed., Command Decisions, Office of the Chief of Military History, U.S. Army, Washington, D.C: 1960, 430. Different dates are given for the liberation of Paris. French General Leclerc's 2eme Blindee crossed the Seine by the Pont Austerlitz with one detachment of troops on night of 24-25 August. Russel F. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945*. Bloomington, IN. 1981, 251.

[31] Russell F. Weigley, Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945, Bloomington, IN., 1981, 268, The Allies actually covered 260 phase-line days during the period 25 August to 12 September. They advanced from the D+90 to D+350 phase-line in 19 days. McDonald, *The Decision to Launch Operation Market-Garden*, 422.

[32] Ibid.,

[33] Ibid, 269.

[34] McDonald, 419.

[35] Ibid, 425.

[36] Thomas E. Griess, Ed., Atlas for the Second World War: Europe and the Mediterranean, West Point Military History Series. Wayne, NJ., 1990, 66. Gasoline was not the only commodity that was short. Equipment was in dire need of maintenance, repair parts were in short supply and soldiers were physically worn out from constant fighting during the exploitation across France. Weigley, *Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945*, 282.

[37] Ambrose, 131. Eisenhower commented after the war in an interview to Cornelius Ryan that what Market-Garden eventually proved was that the idea of 'one full-blooded thrust' to Berlin was silly. Ryan, *A Bridge Too Far*, 76.

[38] McDonald, 433.

[39] Nigel Hamilton, Monty, New York, 1981, 426.

[40] Weigley, 278.

[41] Hamilton, Monty, 430. Eisenhower was named Allied Land Forces Commander in Chief as well as Supreme Commander on 1 September. Montgomery had previously been in charge of all ground operations in Northern France and Eisenhower had served as the overall Joint/Combined Forces Commander. When General Bradley became aware of the plan for Market-Garden he immediately telephone Eisenhower to protest on the grounds that it was a rejection of the broad front strategy. Bradley was certain that Montgomery had no intention of making this a side-show. Bradley was certain that Montgomery was intent on making this the beginning of the single, narrow front attack to Berlin. Bradley, *A General's Life, An Autobiography by General of the Army Omar N. Bradley*, 327-329.

[42] Ibid, 431. Also see James A. Huston, *Airborne Operations*, VII-22. By agreeing to Operation Market-Garden, Eisenhower shut off a great deal of the 12th Army Group's supplies. Since 17 August, Bradley's armies had received two-thirds of all Allied air-lifted supplies. The huge number of transport aircraft that had been supplying the Allied armies were withdrawn on 12 September to begin readiness for the airborne operation. Nigel Hamilton, *Monty: Final Years of the Field Marshall, 1944-1976*. New York, 1987, 55.

[43] Weigley, 428. Montgomery requested the support of General Hodge's First U.S. Army to secure the British Second Army's right (southern) flank. Bradley, , *A General's Life, An Autobiography by General of the Army Omar N. Bradley*, 327.

[44] Ibid., 292.

[45] McDonald, 435. The 1st British Airborne Division participated in the invasion of Sicily and as a ground division with the 8th Army in Italy. It returned to the United Kingdom in early 1944. It did not participate in Operation Neptune, the airborne operation for the Normandy invasion. The 1st Polish Airborne Brigade had not yet seen action during the war. The 82nd Airborne Division was employed in an airborne role during the invasions of Sicily in 1943 and the

Normandy invasion and returned from France in late July. The 101st Airborne Division participated in saw it's first action in Normandy and returned from France in late July. *FAAA Report,* 5.

[46] FAAA Report, 5. General Brereton commanded the Ninth U.S. Air Force before assuming command of the FAAA. Browning was also reputed to have detested Brereton who was promoted to the command of the First Allied Airborne Army (FAAA) with no experience in airborne operations. "Brereton was in Browning's view confused, weak-willed, and over-cautious. In August, Browning threatened Brereton with his resignation over the tactical use of airborne forces. It is ironic to note that although Browning seemed to hold Brereton in contempt for not having any airborne experience, he had none of his own. Nigel Hamilton, *Monty: Final Years of the Field Marshall, 1944-1976.* New York, 65.

[47] McDonald, 435. General Marshall wrote General Eisenhower on 10 February 1944 concerning the use of airborne forces for the upcoming Normandy invasion. He was insistent about their use in a deep operational role. Marshall's comments disagreed with the proposed use of airborne forces for Overlord and provided two recommendations for their employment. General Eisenhower's reply on 19 February disagreed with Marshall on the grounds that airborne forces were too immobile after landing and were vulnerable to counterattacks. Eisenhower's vision of airborne forces differed greatly from Marshall's. Eisenhower's view that the best mission for airborne operations was in a tactical role while Marshall viewed them being used in a long-range strategic role. Huston, *Airborne Operations: The United States Army in World War II,* VI-2 and VI-6.

[48] Weigley, 288.

[50] Huston, VII-2. Some of the other requirements of the FAAA headquarters were: supervision of training and allocation of facilities, study and recommendations for improvements in airborne equipment, consultation with the naval component concerning naval requirements and the movement of airborne forces over the sea.

[51] FAAA Report, 3. Brereton wrote in his diary on 16 September 1944, that on 10 September, the day his HQs was tasked to start the planning for Market-Garden, his staff had 18 missions in various stages of planning. Operation Comet was very similar to Market. It called for the 1st Airborne and 1st Polish Parachute Brigade to seize the bridges at Arnhem. Montgomery called off the operation on 9 September due to what he considered a lack of support from U.S. forces to support the operation. Brereton, *The Brereton Diaries: The War in the Pacific, Middle East, and Europe,* 343.

[52] Brereton, 343. The same aircraft that were used to deliver paratroopers were used in an auxiliary role to deliver supplies to the front. During the six day stoppage to

plan for FAAA planned airborne operation at Tournai, Operation LINNET, Bradley's 12th Army Group lost an estimated 823 tons of supplies per day. This would have equaled 1.5 million gallons of gasoline.

[53] Nigel Hamilton, Monty: Final Years of the Field Marshall, 1944-1976. New York, 1987, 65. Hereafter referred to as *Final Years*. Colonel Mackenzie called Browning's enthusiasm for the projected airborne insertion to help encircle the Panzer divisions engaged with Montgomery's 21st Army Group at Caen as suicidal.

[54] Omar N. Bradley, A Soldier's Story, New York, 1951, 416.

[55] 21st Army Group, 3.

[56] FAAA Report, 10.

[57] Huston, VII-23 and VII-39. The Lower Rhine River is also referred to in many documents and books as the Neder Rijn which is the Dutch spelling.

[58] FAAA Report, 10.

[59] 21st Army Group, 3. The 8th British Corps consisted of only the 3rd Division, 12th Corps consisted of the 7th Armor Division, 4th Armor Brigade, and the 15th (S) Division. 30th Corps was made up of three divisions; the Guards Armor Division, also referred to as the Irish Guards, the 43rd (Wessex) Infantry Division the 50th Northumbrian Division, the 8th Armored Brigade and a Dutch brigade. Sir Brian Horrocks, Eversley Belfield and Major-General H. Essame, *Sir Brian Horrocks, Corps Commander*. New York, 1977, 99.

[60] Sir Brian Horrocks, Eversley Belfield, and Major-General H. Essame, Sir Brian Horrocks, Corps Commander, New York, 1977, 99 and Annex A-2. At full strength, British and Canadian divisions had the following number of officers and soldiers: armored division 14,964, infantry division 18,347. The figure of 70,000 is an estimate based on the relative strengths of the units which were certainly less than 100% due to the extensive combat operations of the previous months. 30th Corps consisted of one armored division and two infantry divisions, one armored brigade, a Dutch brigade and an unknown number of corps support units as well as the airborne forces logistics elements. It is likely that there were well over 150,000 soldiers and airmen involved in the Market-Garden operation.

[61] Horrocks, 99. Horrocks stated in the operations plan briefing that he hoped that the lead forces of 30th Corps could reach Arnhem in 48 hours.

[62] U.S. Army, FM 34-130, Intelligence Preparation of the Battlefield, Washington, DC: Department of the Army, 1990, 1-1.

[63] Ibid.,

[64] Ibid, 2-1.

[65] U.S. Army, 101st Airborne Division, Annex 1 (Intelligence with Enclosures a-d) to Field Order Number 1: Operation Order for Market, Copy 85 of 1115 copies, 14 September 1944. Appendix 1 of Annex 1 contains a detailed listing of the aerial photographs used by the intelligence and operations staff to select drop zones and landing zones in the 101st Airborne Division area of operations. It contains a listing and description of 117 aerial photos that display targets such as bridges, enemy defensive positions, and obstacles on DZ/LZs. It is assumed that other units in the 1st British Airborne Corps had similar intelligence derived from imagery.

[66] Horrocks, 99. Horrocks G-2's assessment was very accurate. The ground between Nijmegen and Arnhem that 30th Corps advanced on was described in the 21st Army Operation "Market-Garden" post war report as being very difficult. "Progress by the armour was slow as it was compelled to keep to the road which imposed upon it advancing on a on tank front. Not only had this road deep ditches on both sides, thereby preventing deployment off it, but it was also raised about 6 feet above the surrounding countryside. Thus our tanks were a perfect target for enemy 88mms, 105mms and Tiger tanks who had formed a very strong anti-tank screen some 600 yards off the road on the right flank in area of Ressen station." *21st Army Group*, 55.

[67] Ibid., 117. The term "island" referred to the area between Nijmegen and Arnhem.

[68] Ibid., 102. An excellent description of the Irish Guards initial battle is provided by Booth and Spencer in *Paratrooper: The Life of Gen. James M. Gavin*, 221. The 21st Army report lists eight tanks from the Second Squadron of the Guards Armored Division being destroyed or "brewed-up." *21st Army Group*, 37.

[69] Ambrose, 134. In *Monty*, there is no mention of Smith and Strong's visit to persuade him to change the plan because of the existence of the 2nd SS Panzer Corps in Arnhem. According to Nigel Hamilton, General Smith was dispatched to visit Montgomery for the purpose of giving him "all he asked. Everything." Hamilton, *Monty*, 450. Ambrose's source is an interview with General Strong in 1979 which lends credence to the purpose of the visit as being twofold; coordinate support issues with Montgomery and ensure Montgomery knew about the presence of the SS Panzers in Arnhem.

[70] Hamilton, Final Years, 88.

[71] Hamilton, Monty, 452. According to Hamilton, the approval to launch Market-Garden was delivered in person to Montgomery by General Bedell Smith and General Strong on 12 September. The letter from Montgomery to Alan Brooke was the same night he received approval from Eisenhower to launch Market-Garden. It is interesting that General Sir Alan Brooke did not agree with Montgomery's plan to launch Market-Garden. Alan Brooke wrote in his diary, "I feel that Monty's strategy for once is at fault. Instead of carrying out the advance on Arnhem he ought to have made certain of Antwerp in the first place." Lyman B. Kirkpatrick, *Captains Without Eyes: Intelligence Failures in World War II*, Boulder, CO., 1987, 223.

[72] FAAA Report, 11.

[73] Robert E. Urquhart, Arnhem, London, 1958, 202. The land surrounding the 1st Airborne Division drop and landing zone is below sea level, with hundreds of dikes, ditches, and small patches of woods. Most fields were not more than two or three hundred yards long. The area was densely populated and had a number of sizable cities are in the area of operations. Arnhem had a population of about 98,000 at the time of Market-Garden. *U.S. Army, 82nd Airborne Division, Annex 1b. Tactical Study of the Terrain to Annex 1 (Intelligence) Field Order Number 11: Operation Order for Market, Copy 80 of 100 copies, 11 September 1944*, 1.

[74] AAOH, 2.

[75] Bernard L. Montgomery, The Memoirs of Field-Marshall Montgomery of Alamein, K.G. New York, 1958, 266. According to Montgomery, the main reason for the failure of Market-Garden was the failure of the 12th Army Group under General Bradley to regard the operation as the spearhead of a major Allied movement. Montgomery thought if Bradley had given priority of logistics to the 1st U.S. Army they could have presented a formidable diversion to draw forces from the 21st Army Group front. The other reasons presented by Montgomery were weather and the underestimation of the capabilities of the II SS Panzer Corps.

[76] R. Urquhart, 203. General Urquhart believed that the division did poorly in the movement from the drop and landing zones to the objective. He was especially critical of their poor showing in urban combat. He wrote that they failed to consider the problem of the obstacles that the tightly build-up terrain in Arnhem provided. A Panzer SS major gave a contrasting view. The SS major told Major Gough, the 1st Airborne Division's reconnaissance squadron commander that he had been at Stalingrad and it was clear from their actions that they were experienced in street fighting techniques. Major Gough replied that they had not

tried it (urban fighting) before but promised that they would do much better next time. Bryan Perrett, *Last Stand, Famous Battle Against the Odds*. 184. Controversy surrounds the ability of the German's to recover so quickly from the surprise of the airborne attack. There is speculation that a double-agent named Christiaan Lindemans, called King Kong because of his size (6'3, 260 pounds), compromised the plan to General Student, the First Parachute Army Commander. Student has denied ever meeting Lindemans and first heard of the story in an Allied prisoner of war camp after the war. Student does admit to having a copy of the Market-Garden plan in his possession soon after the Allies landed. It is unknown which Allied unit allowed it to be captured. Ryan, *A Bridge Too Far*, 156 and 255.

[77] Ryan, 486. The 1st Airborne Division's defense of the bridge was one of the most gallant battles of modern history. Lieutenant Colonel Frost's 2nd Battalion, 1st Parachute Brigade was thought to be the outstanding independent parachute operation in history. Frost's battalion held the bridge at Arnhem until D+4 until every paratrooper was killed, wounded or captured. Gavin, *Airborne*, 120.

[78] Bryan Perrett, Last Stand: Famous Battle Against the Odds, London, 1991, 173.

[79] FM 90-26, A-5. There is a lack of definitive guidance given in FMs and TMs on methods of planning for airborne drop zones. FM 100-27 recognizes the importance of an aerial reconnaissance plan for the objective area as well as for the DZ. *FM 100-27, USA/USAF Doctrine for Joint Airborne and Tactical Airlift Operations*, 77.

[80] FM 34-130, 2-23.

[81] Brereton, 364. Rain affected the off road trafficability of 30th Corps tanks on D+2 and D+3. The other two major reasons were a poor assessment of the enemy's capability to continue the fight and lack of close-air-support during key times in the battle. Field Marshall Montgomery commented that the bad weather was one of the four reasons for the failure of Operation Market-Garden. He said: "This turned against us after the first day and we could not carry out much of the later airborne programme." Montgomery, *The Memoirs of Field-Marshall Montgomery of Alamein*, 266.

[82] AAOH, 6.

[83] Gavin, 112. The 1st Airborne Division consisted of the 1st Parachute Brigade, 1st Airlanding Brigade, 4th Parachute Brigade, and the 1st Polish Airborne, assigned presumably as OPCON.

[84] R. Urquhart, 202.

[85] Gavin, 112. The southern end of the Arnhem bridge was never secured during the battle. The lack of available transport lift and weather also affected the 101st and 82nd Airborne Divisions as they were not able to land all of their glider troops until D+6. As a result, the U.S. divisions did not have the capability to defend the lines of communications from interdiction by German forces in their assigned areas of operation and 30th Corps units were subsequently assigned to assist this mission. As a result the 30th Corps was required to use units originally planned for the breakthrough to Arnhem in a defensive role. The FAAA post operation report, Allied Airborne Operation in Holland, stated that the "whole operation would have been completely, instead of 90% successful" if the weather had cooperated. *AAOH*, 12-14 and 21.

[86] AAOH, 21, Parachute artillery had not fared well during the Sicily and Normandy operations and many senior airborne leaders doubted the efficiency of dropping field artillery by parachute. The 82nd Airborne Division dropped the 376th Field Artillery Battalion on D-Day of Market-Garden and they were extremely effective. Their 75mm howitzers were assembled and firing missions in the first hour. Gavin, *Airborne*, 102.

[87] Charles C. Bates and John F. Fuller, America's Weather Warriors, 1814-1985, College Station, TX., 1986, 99. The operational weather requirements for Market-Garden were quite specific. Gliders required at least 1.5 miles of visibility, low turbulence along the routes and minimum ceilings of 1,500 feet. Paratroopers needed minimum ceilings of 1,000 feet, one mile visibility and surface winds of less than 25 miles an hour on the drop zone. Critical values for airborne operations have changed significantly since World War II. Ceiling minimums for airborne operations are 300 feet for flat terrain (day jump), 500 feet for flat terrain (night jump) and 1,000 feet minimum for mountainous terrain. *FM 34-81, Weather Support for Army Tactical Operations*, C-2. This period was also a no moon period which meant the FAAA was forced to conduct a daytime operation. *AAOH*, 6.

[88] Montgomery, 266.

[89] Ryan, 599. There were more Allied forces casualties in the nine days of Operation Market-Garden then the first 24 hours of the Normandy invasion. At D-Day there were an estimated 10,000 to 12,000 total Allied losses. In the first nine days of Market-Garden, Allied losses were greater than 17,000. British casualties were the highest: 13,226. The 1st British Airborne Division (includes Polish Airborne Brigade and British glider pilots) was almost destroyed with 7,578, Horrocks' 30th Corps lost 1,480 and the British 8th and 12th Corps another 3,874. Additionally RAF crews lost 294 during airborne insertions, resupply missions and close-air support sorties. U.S. forces losses were placed at 1,432 in the 82nd

Airborne Division and 2110 in the 101st Airborne Division. Air crew and glider pilot losses were 424. The U.S. airborne divisions continued to hold defensive perimeters until 5 November and sustained an additional 3,597 casualties.

[90] Ronald Lewin, Ultra Goes to War, New York, 1978, 347. Also see, Kirkpatrick, *Captains Without Eyes: Intelligence Failures in World War II*, 227.

[91] Eliot A. Cohen and John Gooch, Military Misfortunes: The Anatomy of Failure in War. New York, 1990, 42.

[92] FM 34-3, 2-1. Joint Pub 2-0 uses a very similar process; planning and direction, collection, processing, and production. *Joint Pub 2-0*, VI-1 to VI-6.

[93] WSEG, 127. The airborne assault in both Neptune and Varsity took place within the depth of the enemy's front where the ground/amphibious forces had a vital interest. WSEG is not entirely correct with this statement as the 82nd Airborne Division had excellent intelligence and the 30th Corps's intelligence proved to be less than sufficient.

[94] Ralph F. Bennett, Ultra In the West: The Normandy Campaign 1944-45. New York, 1980, 5-7.

[95] Lewin, 21-22. As the war progressed Hitler increased the centralization of control over military affairs. He was often forced to contact his theater commanders using long range radio and teletype due to the lack of telephones. This led to an increase in valuable strategic and operational information being available through Ultra.

[95] Keegan, 163.

[97] Ibid, 171. The German's finally captured the island of Crete but not without taking appalling losses. Hitler was "most displeased with the affair." On 20 July he told General Student, "Crete proves the days of the paratroopers are over. The paratrooper depends on surprise - the surprise factor is gone."

[98] Bennett, 152-155. Ronald Lewin stated that the German's access to a good telephone system from Holland to Berlin and Wolfshanze (Hitler's headquarters in Prussia) kept Ultra from offering much in the way of operational or strategic intelligence for Market-Garden. Lewin also stated that what little Ultra information which was available to assist with Market-Garden was not properly analyzed or disseminated due to low priority. According to Lewin this low priority was due to the lack of knowledge at Bletchley Park (Ultra headquarters) of the existence of the Market-Garden plan. Lewin, *Ultra Goes to War*, 348.

[99] Ibid, 154.

[100] Ibid, 156. An Ultra message mentioned that the German 15th Army estimated 25,000 men and 550 vehicles had escaped onto the mainland by 7 September. It is likely that many of these were either in the vicinity of the 30th Corps avenue of advance or adjacent the Second British Army left (west) flank. The SHAEF INTSUM on 9 September mentioned the movement of the German 15th Army, "In the Pas de Calais no resistance was offered in general to the Allied drive North and it was quite clear that Fifteenth Army was clearing out Eastwards as best it could leaving certain divisions to move into the CHANNEL port garrisons." *SHAEF INTSUM 25*, 9 September 1944.

[101] Ibid, 153. Bennett did not mention which headquarters made the request or to whom it was requested. Lewin's book states that the decryption referred to Army Group B's desire to establish whether Allies were preparing for thrust to Aachen or against the 1st Parachute Army for a thrust to Arnhem.

[102] Ibid, 150. Model's presence at the Tafelberg Hotel in Oosterbeek was also reported by a HUMINT source. Henri Knap, the leader of the Dutch Underground in Arnhem reported that his agents saw the black, red and white checkerboard pennant that undoubtedly signaled the presence of an German army group commander. Ryan, *A Bridge Too Far*, 146. The SHAEF INTSUM of 26 August also reported that Model might have taken command from either Rommel or Kluge. This was confirmed in the SHAFE INTSUM of 3 September. *SHAEF INTSUM 23*. 3. and *SHAEF INTSUM 24*, 4.

[103] Lewin, 348.

[104] War Department, Report of the General Board: The Military Intelligence Service in the European Theater of Operations. Study Number 12. Washington, DC: 20 December 1946, 16.

[105] Brian Urquhart, A Life in Peace and War, New York, 1987, 72. F.H. Hinsley and E. E. Thomas, C. F. G. Ransom, and R.C. Knight, *British Intelligence in the Second World War: Its Influence on Strategy and Operations, Volume III, Part 2*. New York, 1984, 384.

[106] Stewart W. Bentley, "Intelligence During Operation Market-Garden." Military Intelligence, April-June 1994, 16. The official post-war record shows "nothing significant" was observed in the photos. Hinsley, *British Intelligence in the Second World War: Its Influence on Strategy and Operations, Volume III, Part 2* 385.

[107] Brian Urquhart, 73. Urquhart was not allowed to go on the mission and was threatened with a court martial if he disobeyed orders. He went home on leave to visit his family and was eventually recalled to Holland later in the week (probably on the 22nd) by General Browning. Because of their differences, Urquhart requested and received a new assignment after the completion of Market-Garden. Lewin, *Ultra Goes to War*, 348.

[108] FM 34-2, 2-6.

[109] Robert G. Gutjahr, The Role of Jedburgh Teams in Operation Market Garden. Master of Military Arts and Science Thesis, U.S. Army Command and General Staff College, Ft. Leavenworth, KS., 1990. 1 and 248.

[110] Ibid, 2. Jedburg teams consisted of two officers and one NCO radio operator. American, British, Belgian, Dutch, and French soldiers made up these teams.

[111] Ibid.,

[112] Ibid, 3. The five Jedberg teams that supported Market-Garden were named Dudley, (21st Army Group), Edward (1st Airborne Corps), Claude (1st British Airborne Division), Clarence (82nd Airborne), and Daniel II (101st Airborne).

[113] Ibid, 59. From 28 February 1942 to August 1943, the Nord-Pol operation used captured British radios and codes to request almost 200 drops of equipment and men. The Abwehr used torture, deception, and threats to get SOE agents to collaborate with them.

[114] Ibid, 4.

[115] Hinsley, F. H. and E. E. Thomas, C. F. G. Ransom, and R.C. Knight, British Intelligence in the Second World War: Its Influence on Strategy and Operations, Volume III, Parts 1. New York, 1984, 384.

[116] Ambrose, 132. However, the 16 September SHAEF INTSUM mentioned the 9th and 10th SS Panzer Divisions were withdrawing to the vicinity of Arnhem. *SHAEF INTSUM 26, 16 September 1944.* 7.

[117] Gutjahr, 199.

[118] U.S. Army, 82nd Airborne Division, Annex 1 (Intelligence with Enclosures a-d) to Field Order Number 11: Operation Order for Market, Copy 80 of 100 copies, 11 September 1944. Annex 1a. (2). Notes on Nijmegen Area, Annex 1b. Tactical Study of the Terrain, Annex 1c. (3) Overlay: Enemy Defenses in Nijmegen Area, Annex 1c. (4) Enemy Demolition Charge at Nijmegen Bridge. Team

Clarence was also responsible for organizing approximately 600 resistance members who were armed with the weapons of fallen U.S. soldiers. They were given the mission of guarding the approaches to the Nijmegen bridges. Bestebreurtje was also responsible for contacting resistance members in the Arnhem area which passed tactical information concerning the 1st Airborne Division which had no communications with the 1st Airborne Corps Hqs. *Gutjahr*, 202.

[119] Horrocks, 125.

[120] Charles W. Sydnor, Soldiers of Destruction: The SS Death's Head Division, 1933-1945. Princeton, NJ., 1977, 284-288. The II SS Panzer Corps fought with great distinction on the eastern front at many battles including the largest single armored battle in history at Kursk on July 12, 1943. During this battle, the Russians committed seven corps of tanks, over 850 T-34 tanks, and SU-85 self-propelled assault guns. The II Panzer Corps ultimately met disaster at Kursk against tremendous odds but emerged from their defeat with their reputations and prestige enhanced. Hauser's II SS Panzer Corps was withdrawn to Italy after their defeat and were later sent to France where they fought with diminished success against the Allied forces.

[121] FM 34-3, 2-3.

[122] Ibid, 2-4.

[123] SHAEF INTSUM 26, 7. Numerous sources, many of them annotated in this monograph, point out that Montgomery, Brereton, and Browning were aware of the presence of the II SS Panzer Corps in the Arnhem area.

[124] Ibid, 2.

[125] Annex 1 c., Order of Battle Summary to Annex 1, Intelligence to 82nd Airborne Division Order Number 11, Operation Market, 11 September 1944, 1. It is likely that the source of this information is Ultra rather than a 'captured document.' Ultra information was protected by attributing the information as coming from another source.

[126] FM 34-3, 2-18.

[127] Ibid, 10-12.

[128] Lyman B. Kirkpatrick, Captains Without Eyes: Intelligence Failures of World War II. Boulder, CO., 225.

[129] Horrocks, 100. Horrocks had no idea that the 9th and 10th SS Panzer Divisions had moved back to refit in the Arnhem area. He stated that although the airborne force was too lightly armed to defeat them, "we could have defeated them quite easily."

[130] R. Urquhart, 9. The intelligence estimate prepared by the 82nd Airborne Division prior to Market-Garden was very accurate and included information that would have been critical to the 1st Airborne Division. It is probable that the 82nd received their intelligence directly from the 18th Airborne Corps or the FAAA rather then from the 1st Airborne Corps. *Annex 1 c., Order of Battle Summary to Annex 1, Intelligence to 82nd Airborne Division Order Number 11*, 1.

[131] Eisenhower, Dwight D., Crusade in Europe. New York, 1948, 310. *FAAA Report, December 1944, Appendix 1*, pages 1-3. Lawrence Massengill, "*A Corridor to Nowhere.*" Military Review, September 1994, 70.

[132] Hamilton, Final Years, 89.

[133] Lewin, 346.

[134]. Ambrose, 134. Montgomery ridiculed the SHAFE report and Browning relieved his G2, Major Urquhart for his persistent attitude about the dangers of the 9th and 10th SS Panzer Divisions. Brian Urquhart, *A Life in Peace and War*. 73

[135] Kirkpatrick, 211.

[136] Ambrose, 135.

[137] B.H. Liddell Hart, Thoughts on War, 1944.

[138] Bentley, Stewart W., "Intelligence During Operation Market-Garden." Military Intelligence, April-June 1994, 18.

[139] Hamilton, The Final Years, 89.

BIBLIOGRAPHY

Articles

Bentley, Stewart W., "Intelligence During Operation Market-Garden." Military Intelligence, April-June 1994, 15-18.

Bigelow, Michael E., "Eisenhower and Intelligence," Military Intelligence, January-March 1991, 19-25.

Massengill, Lawrence, "A Corridor to Nowhere." Military Review, September 1994, 68-74.

Books

Ambrose, Stephen E., Ike's Spies, Eisenhower and the Espionage Establishment. Garden City, NY., 1981.

Bates, Charles C. and John F. Fuller, America's Weather Warriors, 1814-1985. College Station, TX., 1986.

Bauer, Cornelis, The Battle of Arnhem. New York, 1966.

Bennett, Ralph F., Ultra In the West: The Normandy Campaign 1944-45. New York, 1980.

Booth, T. Michael and Duncan Spencer, Paratrooper: The Life of Gen. James M. Gavin. New York, 1994.

Bradley, Omar N., A Soldier's Story. New York, 1951.

Bradley, Omar N. and Clay Blair, A General's Life, An Autobiography by General of the Army Omar N. Bradley. New York, 1983.

Brereton, Lewis H., The Brereton Diaries: The War in the Air in the Pacific, Middle East and Europe. New York, 1946.

Cohen, Elliot A. and John Gooch, Military Misfortunes: The Anatomy of Failure in War. New York, 1990.

Deighton, Len, Blitzkrieg: From the Rise of Hitler to the Fall of Dunkirk. London, 1979.

D"Este, Carlo, Decision in Normandy. New York, 1983.

Eisenhower, Dwight D., Crusade in Europe. New York, 1948.

Gavin, James M., Airborne Warfare. Washington, D.C: 1947.

Griess, Thomas E., Ed., Atlas for the Second World War: Europe and the Mediterranean. West Point Military History Series. Wayne, NJ., 1990.

Hamilton, Nigel, Monty: Final Years of the Field Marshall, 1944-1976. New York, 1987.

Hamilton, Nigel, Monty. New York, 1981.

Hibbert, Christopher, The Battle of Arnhem. New York, 1962.

Hinsley, F. H. and E. E. Thomas, C. F. G. Ransom, and R.C. Knight, British Intelligence in the Second World War: Its Influence on Strategy and Operations, Volume III, Parts 1 and 2. New York, 1984.

Horrocks, Sir Brian, Eversley Belfield, and Major-General H. Essame, Sir Brian Horrocks, Corps Commander. New York, 1977.

Keegan, John, The Second World War. New York, 1989.

Kirkpatrick, Lyman B., Captains Without Eyes: Intelligence Failures in World War II. Boulder, CO., 1987.

Lanning, Michael L., Senseless Secrets: The Failures of U.S. Military Intelligence from George Washington to the Present. New York, 1995.

Lewin, Ronald, Ultra Goes to War. New York, 1978.

McDonald, Charles B., The Decision to Launch Operation Market-Garden. Kent R. Greenfield, Ed., Command Decisions, Office of the Chief of Military History, U.S. Army, Washington, D.C: 1960.

Montgomery, Bernard L., The Memoirs of Field-Marshall Montgomery of Alamein, K.G. New York, 1958.

Perrett, Bryan, Last Stand: Famous Battle Against the Odds. London, 1991.

Powell, Geoffrey, The Devil's Birthday, The Bridges to Arnhem, 1944. New York, 1985.

Ryan, Cornelius, A Bridge Too Far. New York, 1974.

Strong, Kenneth W.D., Intelligence At the Top: The Recollections of a British Intelligence Officer. New York, 1969.

Sydnor, Charles W., Soldiers of Destruction: The SS Death's Head Division, 1933-1945. Princeton, NJ., 1977.

Urquhart, Brian, A Life in Peace and War. New York, 1987.

Urquhart, Robert, E., Arnhem. London, 1958.

Weigley, Russell F., Eisenhower's Lieutenants: The Campaign of France and Germany 1944-1945. Bloomington, IN., 1981.

Winterbotham, F.W., The Ultra Secret. New York, 1974.

Debriefings of German Leadership

Brittrich, Willi, SS Obergruppensfuehrer and Gen d Waffen SS, Brief Description of the battles of the II SS Panzer Corps During the Period from 28 Aug. to 5 Sep. 1944. European Theater Intelligence Debriefing MS# B-749, 16 January 1948.

Poppe, Major General, 2nd Commitment of the 59th Infantry Division in Holland; 18 September - 25 November 44. DEFE 20, Allendorf, GE. 10 June 1946.

Reinhard, Hans W., General, Infantry, Report of the Commander, LXXXVIII Infantry Corps, 6 June - 21 December 1944. DEFE 20, Allendorf, GE., May 1946.

Sievers, Karl, Major General, Commander, 6th Luftwaffe Field Division, My Attitude on the Possibility of an Invasion in the Netherlands. European Theater Intelligence Debriefing, MS# B-011, 1946.

Student, Kurt, Gen., Commander Army Group H, Supplement to Col. Geyer's Report. Intelligence Division Debriefing, 70 Headquarters Control Commission for Germany (British Element), 22 December 1947.

U.S. Army Foreign Military Studies, Airborne Operations: A German Appraisal. Office of the Chief of Military History, 29 April 1950.

Zimmerman, Bodo, Genlt. z V, OB West, A Study in Command: Atlantic Wall to Siegfried Line. Vol. I, II, III. European Theater Intelligence Debriefing, MS# B-308, HDIE, Allendorf, GE., October 1946.

Government Documents

21st Army Group, Operation "Market Garden," 17-26 September 1944. 10 May 1946.

First Allied Airborne Army, Airborne Operations in Holland: September - November 1944. (Market). Report to Supreme Commander, Allied Expeditionary Force, Copy 73, 22 December 1944.

First Allied Airborne Army, Allied Airborne Operations in Holland, September - October 1944: Report on Operations "Market" and "Garden," Comments on the Operations and Requirements for the Future. Written between 10 October 1944 and 18 February 1945.

Gutjahr, Robert G., The Role of Jedburgh Teams in Operation Market Garden. Master of Military Arts and Science Thesis, U.S. Army Command and General Staff College, Ft. Leavenworth, KS., 1990.

Huston, James A., Airborne Operations: The United States Army in World War II. Office of the Chief of Military History, Washington, DC: (date unknown)

Joint Publication 2-0, Doctrine for Intelligence Support to Joint Operations. Joint Staff, Washington, DC:, 1995.

Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 23. Assistant Chief of Staff for Intelligence, 26 August 1944.

Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 24. Assistant Chief of Staff for Intelligence, 2 September 1944.

Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 25. Assistant Chief of Staff for Intelligence, 9 September 1944.

Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 26. Assistant Chief of Staff for Intelligence, 16 September 1944.

Supreme Headquarters, Allied Expeditionary Force (SHAEF), Weekly Intelligence Summary 27. Assistant Chief of Staff for Intelligence, 23 September 1944.

U.S. Army, FM 34-2, Collection Management. Washington, DC: Department of the Army, 1990.

U.S. Army, FM 34-3, Intelligence Analysis. Washington, DC: Department of the Army, 1990.

U.S. Army, FM 34-8, Combat Commander's Handbook On Intelligence. Washington, DC: Department of the Army, 1992.

U.S. Army, FM 34-81/AFM 105-4, Weather Support for Army Tactical Operations. Washington, DC: Department of the Army and the Air Force, August 1989.

U.S. Army, FM 34-130, Intelligence Preparation of the Battlefield. Washington, DC: Department of the Army, 1990.

U.S. Army, Draft FM 90-XX, Forcible Entry: Multi-Service Procedures for Forcible Entry Operations. Joint Staff, Washington, DC: October 1993.

U.S. Army, FM 90-26, Airborne Operations. Headquarters, Department of the Army, Washington DC:, December 1990.

U.S. Army, FM 100-5, Operations. Washington, DC: Department of the Army, 1993.

U.S. Army, FM 100-27/AFM 2-50, USA/USAF Doctrine for Joint Airborne and Tactical Airlift Operations. Headquarters, Department of the Army and the Air Force, Washington, DC: January 1985.

U.S. Army, Student Text 101-5, Command and Staff Decision Processes. U.S. Army Command and General Staff College, Ft. Leavenworth, KS., February 1996.

U.S. Army, 82nd Airborne Division, Field Order Number 11: Operation Order for Market, Copy 83 of 100 copies, 13 September 1944.

U.S. Army, 82nd Airborne Division, Annex 1 (Intelligence with Enclosures a-d) to Field Order Number 11: Operation Order for Market, Copy 80 of 100 copies, 11 September 1944.

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U.S. Army, 305th Glider Infantry Regiment, 82nd Airborne Division, Field Order No. 6. Copy 3 of 40 Copies, 14 September 1944.

U.S. Army, 504th Parachute Infantry Regiment, 82nd Airborne Division, Intelligence Annex to Accompany Field Order No. 12. Copy 35 of 45 Copies, 13 September 1944.

U.S. Army, 505th Parachute Infantry Regiment, 82nd Airborne Division, Field Order No. 1. Copy 3 of 40 Copies, 14 September 1944.

U.S. Army, XVIII Airborne Corps, Operation "Market," Preliminary Tactical Study of the Terrain.. Office of the Assistant Chief of Staff, G-2, Unknown Copy number of Unknown Copies, 11 September 1944.

U.S. Army, 101st Airborne Division, Annex 1b to Field Order Number 1, Photo Intelligence Report. Sortie Number 106G2789, 11 September 1944.

U.S. Army, AGF Report No. 440 - Combat Lessons of 82nd Airborne Division. War Department Observers Board, European Theater of War. 9 December 1944.

War Department, Report of the General Board: The Military Intelligence Service in the European Theater of Operations. Study Number 12. Washington, DC: 20 December 1946.

Weapons Systems Evaluation Group (WSEG) Staff Study Number 3. A Historical Study of Some World War II Airborne Operations. 20 February 1951.